

Family Mugilidae

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Body oblong, more or less compressed. Mouth small. Jaws with small, feeble teeth, or none, when present of various form, mostly loosely attached, often ciliiform. Premaxillaries protractile. Gill openings wide, membranes separate and free from isthmus. Gills 4, slit behind fourth. Gill rakers long and slender. Pseudobranchiae large. Branchiostegals 5 or 6. Air bladder large, simple. Intestinal canal long. Peritoneum usually black. Vertebrae 24. Scales rather large, cycloid. No lateral line, but furrows often deepened on middle of

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each scale so as to form lateral streaks. Two short dorsals, well separated, first of 4 stiff spines and last much shorter than others. Second dorsal longer than first, like anal. Anal spines 2 or 3, graduated to last. Caudal forked or emarginate. Pectoral rather high. Ventral abdominal, not far back, of spine and 5 rays.

Fishes of small or moderate size, valued as food, living in fresh waters and on the shores of warm countries. Their food is organic matter contained in the mud of the bottom.

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An examination of the type of Agonostomus bryanti Bean and Weed shows it is not a member of the present family, to which it was assigned by these authors. Weber and Beaufort have correctly suggested that it "has a superficial likeness with Crassiops" to which genus of the Eleotridae it doubtless belongs.

Analysis of Genera

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a. Mugilinae. Mouth transverse, lower jaw widely angular in front; teeth ciliaform, in but one or few rows in each jaw; no teeth on palate.

b. Ciliaform teeth in jaws simple.

c. Front of jaws broadly convex as seen from above; lips moderate.

d. Orbits with well developed adipose eyelids, covering at least part of iris. Mugil.

d.² Orbits without distinct adipose lids.

e. Eyes lateral, moderately advanced. Liza.

e.² Eyes protrude above upper side of head, greatly advanced. Rhinomugil.

c.² Front of jaws broadly truncate as seen from above; lips broad; no adipose eyelids. Chelon.

b.² Ciliaform teeth in jaws spatulate; eye without or only very narrow marginal rim like lids. Squalomugil.

a.² Agonostominae. Mouth cleft lateral,
lower jaw narrowly angular or
rounded in front; minute teeth
present on palate.

f.¹ Jaws with teeth.

g.¹ Teeth above well developed,
uniserial. Myxus.

g.² Teeth above minute, in narrow band.
Agonostomus.

f.² Jaws toothless. Trachystoma.

Genus Mugil Linnaeus

Mugil Linnaeus, Syst. Nat., ed. 10, pt. 1, p. 316, 1758. (Type Mugil cephalus Linnaeus, monotypic.)

Albula (not Granow 1763, Osbeck 1761)

Catesby, Nat. Hist. Carolina, vol. 2, ed. 2, p. 6, 1771. (Type Mugil curema Valenciennes, monotypic.) (Inadmissible.)

Cestreus Klein, Gesellsch. Schauplatz, vol. 5, p. 460, 1777. (Type Mugil cephalus Linnaeus.) (Inadmissible.)

~~Chelon Röse, Vertebr. Fingern. Syn. Rom.~~

~~Hist., ed. 2, p. 118, 1793. (Type Mugil~~

~~Chelo Cuvier, affixed by Jordan and~~

~~Eichmann, Genera of Fishes, pt. 1, p.~~

~~52, 1917.)~~

Cephalus (Plumier) Lacépède, Hist. Nat. Poiss., vol. 5, pp. 384, 386, 1803. (Type Mugil cephalus Linnaeus, tantotypic.) (Inadmissible.)

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Ello Gistel, Handb. Naturges., p.
356, 1850 [=1847]. (Type Ello
cephalus Gistel = Mugil cephalus Linnaeus,
monotypic.)

Arnion Gistel, Naturges. Thierw., p. x,
1848. (Type Mugil cephalus Linnaeus,
virtually, as Arnion Gistel proposed
to replace Mugil Linnaeus.)

Queriniana Jordan and Gilbert, Proc.
U. S. Nat. Mus., vol. , p. 588, 1882.
(Type Myxus harengus Günther,
monotypic.)

~~Liza Jordan and Swain, Proc. U. S.
Nat. Mus., vol. 1, p. 261, 1884. (Type
Mugil capito Cuvier, orthotypic.)~~

~~Hadalechilus Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. 1, p.
261, 1903. (Type Mugil labes Cuvier,
orthotypic.)~~

Allochelon Whitley, Austral. Zoologist,
vol. 16, pt. 3, p. , August 1930. (Type
Mugil paigiensis Joy and Gaimard,
orthotypic.)

Body oblong, rather robust or
 somewhat compressed. Eye large,
 lateral. Adipose eyelid variably
 large or little developed, when
~~present~~ nearly concealing eye;
 little developed in ^{of some species} young.
 Mouth small, partly inferior,
 more or less transverse, lower
 jaw angulated. Upper lip moderate
~~to broad~~ jaws with one or few
 series of short, flexible, ciliiform
 teeth; less developed in young.
 No vomerine or palatine teeth.
 Preorbital usually entire, more
 serrate in young. Stomach
 muscular, like gizzard of fowl.
 Scales large, cycloid. Anal
 spines 3, only 2 developed in young,
 fin slightly longer than second
 dorsal.

Ambassis buruensis Bleeker.

Ambassis buruensis Bleeker, Nat. Tijds. Ned. Indië, vol. 13, 1857, p. 79. Kajeli, Buru.

— Bleeker, Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 137, pl. (75) 353, fig. 5 (Sumatra, Bali, Buru). — Weber, Zool. Ergebn. Reise Niederl. Ost Indien, vol. 3, 1894, p. 408 (Tjénrana River, Pampanna, Celebes; Kupang, Timor); Zool. Forschungs. Austral. Vemon, vol. 5, 1895, p. 263 (Amboina fresh waters).

Ambassis buruensis Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 226 (copied). —

Martens, Preuss. Exped. Ost Asien, vol. 1, 1876, p. 386 (Luzon; Kupang, Timor). —

Meyer, Anales Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885, p. 11 (north Celebes). — Elera, Cat. Fauna Filip., 1895, p. 469 (Luzon, Pasig, Manila). — Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 18 (Cavite).

A large genus, with many species, feeding on mud and living in great schools along the shores and brackish lagoons in all warm regions. Some enter fresh water and many are valued as food.

The following imperfectly described species I am unable to properly locate:

1 example. Stream near village at
Chase Head, Endeavor River, Palawan.

December 22, 1908. Length 50 mm.

2 examples. Sibuy Bay, January 7, 1908. Length 63 to 67 mm.

23 examples. Dapit, Marinduque

Island. February 25, 1909. Length 50 to
90 mm.

17275 and 17276. Verde del Sur
Island, Palawan. April 7, 1909.
Length 74 to 85 mm.

19904. Tawao River, Sibuko Bay
vicinity, Borneo. September 30, 1909.
Length 58 mm.

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Mugil acutus Valenciennes

Mugil acutus Valenciennes, Hist.
Nat. Poiss., vol. 11, p. 140, ^{July} 1836 ^{west Australia}
(type locality, "New Holland" Peron [[?] = north [^]]).
— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 410, 1861 (reference). —
McCulloch, Mem. Austral. Mus.,
vol. 5, pt. 1, p. 114, June 29, 1929
(reference).

8 examples. Pincot, Palawan. December 25, 1908.¹⁹⁶
Length 76 to 102 mm.

90 examples. Tangauran River,
Busuanga Island. December 16, 1908.
Length 21 to 76 mm.

3 examples. Pasacao, Refugio Island,
Ragay Gulf, Luzon. March 9, 1909.
Length 52 to 67 mm.

8484 and 8485. Port Dupon, Leyte
Island. March 17, 1909. Length 73 to 80
mm.

6734. Port Matuloc, Luzon. November
2, 1908. Length 57 mm.

7 examples. Pucot River, Mariveles,
Luzon. January 29, 1909. Length 62 to 90 mm.

11251 and 11252. Ragay River, Ragay
Gulf, Luzon. March 10, 1909. Length
25 to 105 mm. 54 examples. [4967 to 4982;
5386 to 5399].

12 examples. River at Port Dupon, Leyte.
March 17, 1909. Length 30 to 85 mm.

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over 5 head $4\frac{1}{2}$,
Depth 4; head depth little
more than half its length. Eye
4 in head, equals snout.

Scales broader than long,
with 12 radiating striae.

D. IV - I, 8; A. III, 9; caudal
14; pectoral 16; ventral I, 5.

Color golden, more brownish
green on back. nearly 100 mm.
(Valenciennes.)

North West Australia? Described
as elongate, especially the head
more elongate and pointed than
in other mullets.

653
Cm 29 Sparus macrocephalus (Basilewsky)
Pagrus macrocephalus Basilewsky, Nov.
Mem. Soc. Nat. Moscou, vol. 10, 1855, p. 222,
pl. 3, fig. 1? Gulf of Pechili and Oriental
Sea, Peking.

Sparus macrocephalus Jordan and Metz,
Mem. Carnegie Mus., vol. 6, no. 1, 1913, p. 34
(Fusan, Korea). $\frac{1}{m}$ Jordan and Thompson,
Mem. Carnegie Mus., vol. 6, no. 4, 1914, p.
257 (Matsushima Bay, Shimonoseki). $\frac{1}{m}$
Jordan and Abbe, Mem. Carnegie Mus.,
vol. 10, ^{no. 2,} 1925, p. 240 (Tokyo, Shizuoka,
Toba, Mikawa Bay, Oyama, Misaki,
Miyazu, Fukuji). $\frac{1}{m}$ Ashima, Jap.
Journ. Zool. Trans. Abstracts, vol. 1, no. 5,
March 31, 1927, p. 153 (copied).
Chrysophrys longispinis (part) Valenciennes,
Hist. Nat. Poiss., vol. 6, 1830, p. 116 (Japanese
example). $\frac{1}{m}$ Schlegel, Fauna Japonica, Pois.,
pts. 2-4, 1843, p. 68, pl. 32 (Japan). —

The following are young examples,
with imperfect characters and
therefore hardly available for
identification:

Three examples. Balayan Bay,
Verde Island Passage. January 19, 1908.
Length 14 to 35 mm.

Six examples. Batangas River,
Batangas, Luzon. June 7, 1908. Length
25 to 31 mm.

Two examples. Caluayan River, 3
miles from mouth near Paluan Bay,
Mindoro. December 11, 1908. Length 28 or 29 mm.

Two examples. Cebu. March 13, 1909.
Length 32 to 35 mm.

One example. Balabane Island,
eastern Palawan and vicinity. April 8, 1909.
Length 37 mm.

24036. Labuandata Bay, Gulf of Boni,
Celebes. December 18, 1909. Length 52 mm.

14417, 23544 to 23546, 23913, 23939.

Talisse Island, north of Celebes.

November 9, 1909. Length 84 to 101 mm.

23682, 23900 to 23903. Talisse Island.

February 21, 1908. Length 65 to 74 mm.

23860 and 23861. Tugian Bay, Tugian
Island. November 9, 1909. Length 74 to
76 mm.

23444 and 23446. Roworua Island.

December 2, 1909. Length 50 to 80 mm.

^{to 23605.}
23603, Gane Road, Gillolo Island.

December 1, 1909. Length ⁶⁸~~88~~ to 89 mm. 4 examples.

~~Example. Gane Road. December 1, 1909.~~

~~Length 68 mm.~~

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One example. Dumaca River, Luzon.

February 25, 1907. Length 37 mm.

Two examples. Endeavour Strait,
at north end, north west coast of
Palawan. December 22, 1908. Length
22 to 27 mm. Li. III, 9, I. Back drab,
sides and below bright silvery white.
Fins uniform whitish.

Two examples. Endeavour Strait,
Palawan. December 23, 1908. Length
27 or 28 mm.

Six examples. Manila Bay, Luzon.
December 7, 1907. Length 17 to 24 mm. Poor.

Four examples. Manila Bay. December 8,
1907. Length 15 to 27 mm.

Thirteen examples. Manila Bay. January 13,
1908. Length 15 to 17 mm.

23275, 23276, 23420, 23421. Tutu Bay,
Jolo Island, first anchorage. September
19, 1909. Length 93 to 100 mm.

23770. Ulugan Bay, Palawan Island.
December 28, 1908. Length 58 mm.

10, 2396 and 23961. Danawan and Vi
amil Islands, vicinity Darvel Bay,
Borneo, Dutch East Indies. September 26,
1909. Length 75 to 86 mm.

23517 and 23616. Tifu Bay, Bouru
Island. December 10, 1909. Length 41 to 86 mm.

23314 to 23316. Tomahu Island.
December 11, 1909. Length 96 to 102 mm.

24027. Buha Island, Gulf of Tomini,
Celebes. November 20, 1909. Length 90 mm.

Three examples. Luboa Bay, ²²⁵²
(Palawan). December 31, 1905. Length
28 to 37 mm.

34 examples. Masugba Bay, Luzon.
January 15, 1908. Length 14 to ~~22~~²⁶ mm.

One example. Lato River, Lagonoy
Gulf, Luzon. June 18, 1909. Length 33
mm.

Two examples. Pandamon Island.
March 23, 1909. Length 15 mm.

Seven examples. Masugba Bay.
January 21, 1908. Length 23 to 34 mm.

26 examples. Philippines.
Length 17 to 44 mm. Maxillary rather
lateral, not quite reaching eye.
Scales 33, transversely 12, predorsal
16 forward to eye. A. III, 9, I.

Anal pink, dusky bar at base
turning brown near vertical edge.
Caudal pink, edges dusky. Pectoral
pink.

~~23681,~~

~~23700 to 23703. Jalisco Island.~~

~~February 21, 1908. Length 65 to 74 mm.~~

~~1 example. Tataan Pass, Jawi Jawi~~

~~February 21, 1908. Length 72 mm.~~

~~10891. Tilig, Lubang. July 15, 1908.~~

~~Length 98 mm.~~

~~23860 and 23861. Togian Bay, Togian~~

~~Island. November 9, 1909. Length 74 to 76 mm.~~

~~23314 to 23316. Tanabe Island. December~~

~~11, 1909. Length 96 to 102 mm.~~

~~15580 to 15582, 23572, 23514. Telayan~~

~~Island. September 15, 1909. Length 52 to 71 mm.~~

Bright metallic silvery, with gray to white reflections, paler and lighter below. Iris silvery white. Back and upper surface of head brown. Spinous dorsal and soft dorsal bases, also caudal base, blackish or blackish brown. Caudal pale yellowish subbasally, whitish generally and grayish terminally. Soft dorsal with outer parts contrasted pale or whitish. Other fins all whitish.

Three examples. Fort Bois Anchorage, east coast Negroes. ~~At~~ March 31, 1908. Length 29 to 30 mm. Maxillary reaches eye, exposed. A. III, 9.

~~14412, 23544 to 23546, 23913, 23939. Jalisco
Island. November 9, 1909. Length 84 to 101 mm.~~

~~24012. Lara Island. December 15, 1909.
Length 95 mm.~~

23297. Tataan, Simulac Island.

February 19, 1908. Length 79 mm.

14 examples. Tataan. February 19, 1908. Length 48 to 87 mm.

24089. Tataan. February 20, 1908. [167.]

Reddish brown stripes, approaching
vermilion below. Breast pink. First of
stripes at base of dorsal row of spots,
interspaces olive; lower interspaces
pearly. Throat blackish. Iris with
sapphire reflections. Front of dorsal
spines with golden shades, rays pink.
Dusky bar at soft dorsal base,
turning upward on vertical edge.

One example. Port Matalvi, ²²⁵⁴
Luzon. November 22, 1908. Length
16 mm.

Nine examples. San Antonio
Beach, Cavite, Luzon. June 27, 1908.
Length 15 to 30 mm. No adipose eyelids.
Scales 31. Anal III, 9, I. Back drab,
otherwise bright silvery white.

Seventeen examples. San Pascual,
tide pool, March 8, 1909. Length 17 to
20 mm. Scales 32. A. III, 9, I.

One example. Santa Cruz, Marinduque
Island. April 23, 1908. Length 36 mm.

Four examples. Taal, Luzon. January
16, 1908. Length 10 to 21 mm.

15 specimens. Rapurapu Island.
June 22, 1909. Length 66 to 91 mm.

24102^{and 24103.}₁ Rasa Island, Mantaguin
Bay, Palawan Island. April 1, 1909.
Length ^{59 to} 61 mm.

14767, 14769, 23183 to 23187, ^{23344.} Romblon.
March 26, 1908. Length 48 to 70 mm.

21063. Tablayan, Mindoro Island.
December 12, 1908. Length 85 mm.

15776. Tacol Island. September 9,
1907. Length 85 mm.

24000 and 24001. Titankai Reef.
September 24, 1907. Length 54 to 85 mm.

23134 to 23137. Suigao, Mindanao.
May 8, 1908. Length 71 to 93 mm.

One example. Sandakan, Borneo.

February 29, 1908. Length 35 mm.

One example. Kowloon, China.

August 22, 1908. Length 37 mm.

One example. Kowloon, China.

September 14, 1908. Length 22 mm.

23143. Port Matalvi, Luzon Island.
November 22, 1908. Length 100 mm.

1 example. Port Palapay. June 2, 1909.
Length 31 mm.

14604, 23263 to 23267. Port Palapay.
June 3, 1909. Length 72 to 87 mm.

23780. Port Uson, west of Tinas
Island. December 17, 1908. Length 80 mm.
[811.] Alternate dark red brown and
silvery stripes. Snout and lower head
blackish. Fins reddish brown. First
dorsal dusky anteriorly; second
dorsal with indistinct blackish basal
bar. Anal with distinct blackish
basal bar.

Analysis of Species

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- a.' Anal fin with 8 soft rays.
- b.' Scales 32 to 41 in lateral series.
- c.' Pectoral without axillary scale.
- d.' Dorsals and caudal without dark edges.
- e.' Lateral scales 34 or 35; pectoral $1\frac{1}{3}$;
dark spot in pectoral axil (variably parsia.
a. 8 or 9.
- e.² Lateral scales 37 to 40; pectoral $1\frac{1}{2}$.
- f.' Lateral scales 37; pectoral and
caudal dusky, former without dark
spot. haematocheilus.
- f.² Lateral scales 40; small black spot
at pectoral base close before fin
origin. gelatinosus.
- d.² Dorsals and caudal with dark edges;
pectoral reaches dorsal; obscure blue spot
at pectoral base. marginalis.
- c.² Pectoral with pointed axillary scale.
- g.' Pectoral shorter than head or $1\frac{1}{8}$ to
 $1\frac{1}{2}$ in head.
- h.' Pectoral not blackish.
- i.' Lateral scales 30; pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$.
subviridis.
- i.² Lateral scales 32 to 35; pectoral $1\frac{1}{8}$ to $1\frac{1}{4}$.

i.³ Lateral scales 36 to 40.

j.¹ Soft dorsal and anal largely scaleless; pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$. cephalus.

j.² Soft dorsal and anal scaled; pectoral $1\frac{1}{2}$. occidentalis.

h.² Pectoral blackish. perussii.

g.² Pectoral equals or longer than head; scales large 34 to 36. phuysseni.
b.² Scales 45 in lateral series. tongae.

a.² Anal fin with 9 soft rays.

k.¹ Pectoral without axillary scale or if present only rudimentary.

l.¹ Lateral scales 27; pectoral $1\frac{1}{3}$ to $1\frac{3}{5}$; no dark spot at pectoral origin. dussumieri.

l.² Lateral scales 30 to 33; pectoral less than head.

m.¹ no dark spot at pectoral origin.

m.² Gray axillary pectoral spot present. poicilus.

k.² Pectoral with axillary scale. ferdoni.

n.¹ Lateral scales 30 to 35.

o.¹ no dark spot at pectoral origin.

p.¹ Predorsal scales 18 to 20.

q.¹ Eye 3 in head.

q.² Eye $3\frac{1}{2}$ to 4 in head. strongylocephalus.

r.¹ Pectoral long as head. cunnesus.

r.² Pectoral shorter than head. (2258)

s.¹ Maxillary concealed; least depth of caudal peduncle $2\frac{1}{2}$ in head. engeli.

s.² Maxillary exposed; least depth of caudal peduncle $1\frac{2}{3}$ to 2 in head. tade.

p.² Predorsal scales 28; eye $4\frac{4}{5}$ in head. robustus.

o.² Pectoral with dark spot at origin.

t.¹ Lateral scales 31 or 32. georgii.

t.² Lateral scales 32 or 33.

n.² Lateral scales 35 to 40. tadopsis.

n.¹ Pectoral with dark spot at origin.

v.¹ Maxillary exposed. carinatus.

v.² Maxillary concealed (dorsal rays 8 to 10). sordidus.

n.² Pectoral without dark spot at origin. affinis.

n.³ Lateral scales 40 to 43; pectoral shorter than head; dark spot at pectoral origin.

n.¹ Lateral scales 40 to 42.

w.² Lateral scales 42 or 43. speigleri.

oshimai.

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Mugil parsia Buchanan-Hamilton

Mugil parsia Buchanan-Hamilton,
Fishes of Ganges, pp. 215, 380, pl. 22,
fig. 71, 1822 (type locality, Fresh water
rivers of Bengal). — Valenciennes, Hist. nat. Poiss., vol.
11, p. 144, 1836 (Ganges mouth). —
Bleeker, nat. Tijds. ned. Indië,
vol. 3, p. (161) 166, 1852 (Timor
Kupang; Batavia), p. 445 (Banka),
p. 718 (Tandjong Perikat at Koba,
Banka); vol. 5, p. 319, 1853
(Amboina); Verh. Batavia Genoot.
hal. Ich. Bengal, vol. 25, p. 48,
1853 (reference). — Günther, Cat.
Fish. Brit. Mus., vol. 3, p. 426,
fig. (head), 1861 (types; Calcutta;
Karachi). — Day, Fishes of
Malabar, p. 142, 1865; Fishes of
India, pt. 2, p. 350, pl. 75, fig. 2,

Belonoperca chabacaudi, new species.

Depth $2\frac{1}{5}$ to $3\frac{1}{3}$; head $2\frac{1}{2}$ to $2\frac{3}{5}$, width 3 to $3\frac{1}{8}$, snout 3 in head from snout tip; eye $5\frac{1}{4}$ to $5\frac{1}{3}$, $1\frac{3}{4}$ to $1\frac{4}{5}$ in snout, subequal with interorbital; maxillary reaches $\frac{3}{5}$ to $\frac{2}{3}$ in eye, expansion $1\frac{1}{5}$ in eye, length 2 to $2\frac{1}{8}$ in head from snout tip; teeth villiform, in bands in jaws, on vomer and palatines; tongue slender, toothless; preopercle edge strongly denticulate, ridge entire, distinct; opercular spine 3, equidistant, median most posterior; interopercle and subopercle denticulate. Gill rakers 6 + 15, lanceolate, robust, greater than gill rakers or equal $1\frac{1}{2}$ in eye.

Scales 66 to 68 in lateral line to caudal base and 6 or 7 more

1876 (Calcutta); Fauna British
India, Fishes, vol. 2, p. 344, 1889.

on latter, 11 scales above lateral line, 34 below, 25 to 27 predorsal, 12 rows across cheek to preopercle ridge. Fins all ~~scalless~~, except caudal which with 2 rows at least. Front surface of ventrals with small scales on each ray. Scales with 5 or 6 basal radiating striae; apical denticles 20 to 22, each with 4 or 5 transverse series of basal elements; circuli moderate.

D. VIII — IV, 7, I, fourth spine 3 to $3\frac{1}{5}$ in total head length, first divided ray $2\frac{3}{5}$; ^{very slender, short and close,} A. II, 8, I, third ray $2\frac{1}{4}$ to $2\frac{2}{5}$; caudal $1\frac{1}{2}$ to $1\frac{2}{3}$, truncate; least depth of caudal peduncle $2\frac{3}{5}$ to $2\frac{3}{4}$; pectoral $2\frac{3}{4}$; ventral $2\frac{1}{8}$ to $2\frac{1}{5}$.

Dark ecru or chocolate brown, with obscure, ill defined, variable

Mugil cantoris Bleeker, Verh. Batavia.
Genoot. (hal. Ind. Bengal), vol. 25,
p. (48) 100, pl. 1, fig. 4, 1853 (type
locality, Hooghly River, Calcutta);
vol. 26, pl. 1, fig. 4, 1857. — Günther,
Cat. Fish. Brit. Mus., vol. 3, p.
430, 1861 (copied). — Kner, Reise
Novara, Fische, p. 225, 1865
(Madras).

Mugil decim-radiatus Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 452,
1861 (in Bleeker).

dark spots on side of head,
middle of side of body and
on rays of caudal fin. Iris brown.
Spinous dorsal dusky, with
obscure, large, black ocellus
with irregular border of dull
blue gray, apparently in front
and behind. Membranes of other
vertical fins pale buff, rays darker,
especially those of caudal which
with dark spots. Pectoral dull
brown. Ventral more or less dusky.
Narrow buff saddle, little
evident in profile, on front of
caudal peduncle above behind
soft dorsal.

Known only from the types,
obtained in the East Indies.

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Depth $3\frac{2}{3}$; head 4, ^{width $1\frac{2}{3}$.} Snout $4\frac{1}{2}$
in head; eye $3\frac{1}{2}$, greater than
snout, $1\frac{1}{2}$ in interorbital, with
broad adipose lids; maxillary
little exposed; upper lip thin,
only central portion forming part
of snout end; mouth cleft equals
half mouth width, which forms
somewhat obtuse angle; upper
teeth visible; preorbital bent,
not notched, serrated.

Scales 34 or 35 in lateral
series; 11 or 12 transversely, 21
or 22 predorsal forward to snout.
Second dorsal and anal with
small scales. Pectoral without
elongated axillary scale. Scales
rather angular, slightly ctenoid,
each with distinct longitudinal
line.

D. IV - I, 8, first spine $1\frac{2}{3}$ in
head, \equiv first branched ray $1\frac{2}{3}$, little

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behind anal fin origin; A. III, 8 or 9,
first ray $1\frac{3}{4}$ in head; least depth
of caudal peduncle 2; pectoral
 $1\frac{1}{3}$, rays 14; ventral rays I, 5,
fin $1\frac{2}{5}$ in head; caudal $3\frac{3}{4}$ in
rest of fish, emarginate behind.

Golden spot on opercle
above. narrow dark edge on
both dorsals, most distinct on
second. Caudal with yellowish
base and dark extremity.

Sometimes dark in pectoral axil.
Length 153 mm. (Day.)

Seas and estuaries of India.

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Mugil haematocheilus Schlegel

Mugil haematocheilus Schlegel,
Fauna Japonica, Poiss., pts. 7-9,
p. 135, pl. 72, fig. 2, 1845 (type
locality, Nagasaki). — Richardson,
Ichth. China Japan, p. 249, 1846
(seas of China). — Bleeker, Verh.
Batavia. Genoot. (hal. Ich. Japan),
vol. 25, p. 15, 1853 (reference); (hal.
Ichth. Japan), vol. 26, pp. 5, 107,
1857 (Nagasaki); Act. Soc. Sci.
Ind. Néerl., vol. 3, no. 3, p. 6,
1857-58 (Japan). — Steindachner
and Döderlein, Denks. Akad. Wiss.
Wien, math.-naturw. Kl., vol. 49, pt. 1,
p. 266, 1885 (Tokyo). — Franz,
Abhandl. Kon. Bayer. Akad. Wiss.,
vol. 4,
Suppl. Band 1, p. 25, 1910
(Yokohama; Fukuoka).

839

Dules rupestris (Lacépède).

Centropomus rupestris Lacépède, Hist. nat. Poiss., vol. 4, 1802, pp. 252, 273. Golfe de l'île de la Réunion.

Dules rupestris Cuvier, Hist. nat. Poiss., vol. 3, 1829, p. 119 (Bourbon and Mauritius). — Valenciennes, Hist. nat. Poiss., vol. 7, 1831, p. 477 (Mauritius). — Guérin, Iconogr. Règne animal, Poiss., 1829-38, p. 8, pl. 6, fig. 2 (Bourbon). — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 268 (Fiji, Aoalau, Amboina, Mauritius). — Peters, Monatsb. Akad. Wiss. Berlin, 1868, p. 256 (Bases River, Samar; Burbuen River, Leyte); 1876, p. 437 (Mauritius). — Günther, Trans. Roy. Soc. London, vol. 168, 1879, p. 471 (Rodriguez). — Meyer, Ann. Soc. Esp. Hist. nat. Madrid, vol. 14, 1885, p. 13 (Menado, Celebes; Siao, Vangi). — Jatow and Lenz, Abhandl. Senckenberg.

Mugil haematochilus Günther,
 Cat. Fish. Brit. Mus., vol. 3, p. 422,
 1861 (China). — Bleeker, Ned.
 Tijds. Dierk., vol. 4, p. 143, 1873
 (1874) (reference). — Peters,
 Monatsb. Akad. Wiss. Berlin,
 — Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 62, 1901
 1885, p. 923 (Kungpo). — Reeves,
 Journ. Pan Pac. Res. Inst., vol.
 3, no. 2, p. 8, 1927 (reference). —
Lowerby, Nat. Manchuria, vol. 4,
 p. 157, 1930 (Tientsin, Peking,
 Pei Tai Ho, Chin wang Tao). —
Jacot, Sci. Rep. Tôhoku Imp.
 Univ., ser. 4, Biol. vol. 5, no. 4,
 p. 825, December 1930 (Tsing tao;
 variation).

(reference)

50 examples. Paluan River, Mindanao Island. December 11, 1908. Length 20 to 55 mm.

27 examples. Port San Pio Quinto, Camiguin Island. November 11, 1908. Length 40 to 81 mm.

8 examples. Pasot River, Mariveles, Manila Bay, Luzon. January 29, 1909. Length 40 to 69 mm.

5398 and 5401. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 75 to 78 mm.

5856. San Roque, Leyte Island. July 29, 1909. Length 58 mm.

8806. Santiago River, Sagapan Bay, Luzon. February 20, 1909. Length 67 to 88 mm. 6 examples.

19996. West coast Palani Island, off northern Luzon. November 18, 1908. Length 67 mm.

2266

? Mugil haematochilus Elera, Cat.
Fauna Filipinas, vol. 1, p. 539, 1895
(Luzon, Manila).

Liza haematochila Snyder, Proc.
U. S. Nat. Mus., vol. 42, p. 410, 1912
(Tokyo) ✓ — Jordan, Tanaka, Snyder,

— Tanaka, Fig. Deser. Fish. Japan, vol.
8, p. 137, pl. 37, fig. 142, pl. 38, fig. 144,
pl. 39, fig. 146, pl. 40, fig. 150, October 16,
1912 (Tokyo).

Bull. St. John's Univ., no. 1, p. 105,
January 1931 (reference). — Tanaka,
Journ. Fac. Sci. Univ. Tokyo, sect. 4,
Zool., vol. 3, pt. 1, p. 50, November 4, 1931
(reference).

Liza haematocheila Herre, Lignan
Sci. Journ., vol. 2, no. 3, p. 434,
July 22, 1932 (Tei Ping).

2266
? Mugil haematochilus Elera, Cat.
Fauna Filipinas, vol. 1, p. 539, 1895
(Luzon, Manila).

Liza haematocheila Snyder, Proc.
U. S. Nat. Mus., vol. 42, p. 410, 1912
(Tokyo) ✓ Jordan, Tanaka, Snyder,
Journ. College Sci. Tokyo, vol. 33, p.
113, 1913 (reference). — Mori, Hand
List. Manchur. Vert., p. 177, July
1927 (compiled). — Chu, Biol.
Bull. St. John's Univ., no. 1, p. 105,
January 1931 (reference). — Tanaka,
Journ. Fac. Sci. Univ. Tokyo, sect. 4,
Zool., vol. 3, pt. 1, p. 50, November 4, 1931
(reference).

Liza haematocheila Herre, Lignan
Sci. Journ., vol. 2, no. 3, p. 434,
July 22, 1932 (Tei Ping).

below 3 or 4 rows (3 above and ~

below in young).

later

h.ⁿ Upper outer row of teeth conic
or somewhat compressed, of which

Today

Journ.

113, 191.

List. In

1727 (c

Bull. +

13388 to 13390. Bito River,
Abuyog, ~~between Abuyog and~~ Leyte
Island. July 26, 1909. Length 175 to 195
mm.

4 examples. Calugan River, 3 miles
from mouth near Paluan Bay,
Mindoro. December 11, 1908. Length 36
to 47 mm.

1700. Capitanilla, between Cebu and
Leyte. March 18, 1909. Length 245 mm.
[D. 5408.]

10802 and 13969. Isabela River,
Basilan Island. September 11, 1909.
Length 175 to 208 mm.

5816. Iwahig River and tributaries,
Puerto Princesa, Palawan. April 4, 1909.
Length 103 to 111 mm.

5900 to 5909, 19654 and 19655. Malaya
River, Hinunangan Bay, Leyte Island.
July 30, 1909. Length 80 to 180 mm.

Mugil (vel Cestraeus?) xanthurus
Richardson, Ichth. China Japan,
 p. 248, 1846 (type locality, Sea
 of China; Canton).

Mugil so-iny Basilevsky, Nov.
 Mem. Imp. Soc. Nat. Moscow, vol.
 10, p. 226, pl. 4, fig. 3, 1855 (type
 locality, "Sinn Tschiliensis"; Pelson).
 — Günther, Ann. Mag. Nat. Hist.,
 ser. 7, vol. 1, p. 260, 1898 (Newchwang)
 p. 265 (Liao Basin).

Mugil soiny Günther, Ann. Mag.
 Nat. Hist., ser. 4, vol. 12, p. 243,
 1873 (Shanghai); ser. 4, vol. 13,
 p. 157, 1874 (Chefoo).

5554, 5562, 5564. Malatgas and
Cannia River, Puerto Princessa,
Palawan Island. April 4, 1909.
Length 85 to 185 mm.

4405. Malinao River, Palawan.
April 2, 1909. Length 90 to 182 mm.

1 example. Pucot River near Mariveles,
Manila Bay, Luzon. January 29, 1909.
Length 155 mm.

5867^{to}, 5869, 5877, 5880 to 5882. Small
stream at San Roque, Leyte Island.

July 29-30, 1909. Length 65 to 218 mm. ^{16 examples.}

5632 and 5633. Stream at Maagnas,
Lagonoy Gulf, Luzon. June 17, 1909.
Length 90 to 220 mm. 3 examples.

7644, 11702, 17221, 17223, 21540, 22119.
Yana River, Legaspi, Luzon. June 7,
1909. Length 85 to 230 mm.

Muyil sinensis Bleeker, Nederl.
Tijds. Dierk., vol. 4, p. 143, 1873
(1874) (reference).

Agonostoma plicatile (not Günther)
Bleeker, Nederl. Tijds. Dierk., vol.
4, p. 143, 1873 (1874) (on Basilewsky).

Muyil foyneri Günther, Ann. Mag.
Nat. Hist., ser. 5, vol. 1, p. 486,
1878 (type locality, "Tokai, Japan").

~~13561 and~~ 18126. Umbonia stream,
Umbonia, Dutch East Indies.

December 5, 1909. Length 131 mm.

13561. Umbonia stream. December
7, 1909. Length 149 mm.

13472. River Uki, Boero Island.
December 9, 1909. Length 213 mm.

Mugil menadensis

2269

Liza menada Anonymous, Illustrat.
Jap. Aquat. Plants Animals, vol. 1,
pl. 22, fig. 2, 1731 (northern coasts of Japan).
Tanaka,

Liza akame Tanaka,

Belonoperca new genus.

Type. — Belonoperca chabanaudi, new species.

Body rather short, robust, compressed. Head large, with elongated or attenuated snout. Eye moderate, little before middle in head. Mouth protractile, lower jaw protruding. Maxillary large, well expanded, with long, slender supplemental bone. Teeth fine, villiform, in bands in jaws, on vomer and palatines, none on tongue. Tongue long, slender, free. Interorbital moderate. Cranium, preorbital and maxillary more or less finely rugose striate. Preopercle denticulate. Opercle with 3 spines. Gill rakers moderate. Scales finely roughened, uniformly small. Caudal basally and over rays covered with minute

2270

Liza borealis Popov, Trav. Sta.
Biol. Sebastopol, vol. 2, p. 80,
pl. 2, fig. 1, pl. 4, fig. 1, also p.
119, 1930 (type locality, Japanese
Seas to Vladivostok).

Victoria, vol. 1, 1872, p. 170 (Melbourne
 market); London Internat. Exhib. Cat.,
 1872, p. 133 (Victoria); Proc. Zool.
 Acclimat. Soc. Victoria, vol. 2, 1873, p. 130
 (West Australia). $\frac{1}{2}$ Schmeltz, Cat. Mus.
 Godeffroy, no. 5, 1874, p. 24 (Bowen; South
 Sea). $\frac{1}{2}$ Castelnau, Proc. Linn. Soc. New
 South Wales, vol. 3, 1878, p. (350) 372
 (Port Jackson). $\frac{1}{2}$ Schmeltz, Cat. Mus. Godeffroy, no. 7, 1879, p. 40 (Bowen; South Sea).
 (Port Jackson). $\frac{1}{2}$ Hector, Handbooks of New
 Zealand, 1879, p. 16. $\frac{1}{2}$ Klunzinger, Sitz.
 Ber. Akad. Wiss. Wien, math.-naturw.
 Klasse, vol. 80, pt. 1, 1879, p. 57 (Murray
 River and King George's Sound). $\frac{1}{2}$ Pöhl, Cat. Mus. Godeffroy, no. 9, 1884, p. 29 (South Sea).
 $\frac{1}{2}$ Elera,
 Cat. Fauna Filipina, vol. 1, 1895, p. 483
 (Luzon, Manila, Navotas). $\frac{1}{2}$ White, Sea
 Fisher. Rep. Thetis, 1898, p. 26 (New South
 Wales).

2271

Depth 5; head $4\frac{3}{5}$, width $1\frac{1}{4}$.

Snout $5\frac{4}{5}$ in head; eye $5\frac{1}{3}$, slightly greater than eye, $2\frac{2}{3}$ in interorbital, adipose lids broad; maxillary exposed, scarcely reaches eye; upper lip moderately thick; mouth cleft in profile $\frac{2}{3}$ its width; interorbital $2\frac{1}{5}$ in head, low; preorbital narrow, apparently not notched. Gill rakers $55+70$, very slender, $2\frac{1}{6}$ in eye.

Scales 37 in lateral series to caudal base; 14 transversely, 25 predorsal, 10 or 11 interdorsal. Caudal and pectoral with fine scales basally, apparently none on soft dorsal and anal. No long scale in pectoral axil, in ventral axil $1\frac{3}{4}$ in fin. Scales ctenoid, each with deepened median furrow, forming lateral streaks.

2272

D. VI - I, 8, first spine $1\frac{3}{5}$ in head, first branched ray $1\frac{3}{4}$; A. III, 8, first branched ray $1\frac{3}{5}$; least depth of caudal peduncle $2\frac{1}{4}$; pectoral $1\frac{1}{2}$, rays II, 16; ventral rays I, 5, fin $1\frac{2}{3}$ in head; caudal $4\frac{1}{3}$ in rest of fish, little emarginate behind.

In formalin leaden blue, reddish white beneath. Base of each scale dark, forming longitudinal rows of spots. Two dorsals, pectoral and caudal dusky, slightly darker along margin. Ventrals and anal pale, also darker along margin. Length 500 mm. (Tanaka.)

China, Japan. Reported by Elera, perhaps doubtfully, from the Philippines.

2273

Muyil gelatinosus Klunzinger

Muyil gelatinosus Klunzinger,
Archiv Naturg., 1872, p. 35 (type
locality, Hobson's Bay, South
Australia) ^[= Murray River?]; Setys. Ber. Akad. Wiss.
Wien, math.-naturw. Kl., vol. 80, pt.
1, p. 395, pl. 8, figs. 1-a, 1879 (1880)
(Hobson's Bay). — Macleay, Proc.
Linn. Soc. New South Wales, vol. 4,
p. 424, 1880 (reference); vol. 9, p. 41,
1884 (copied). — McCulloch, Mem.
Austral. Mus., vol. 5, ^{pt. 1,} p. 114, June
29, 1929 (reference).

— Barnard, Ann. South Afr. Mus., vol.
21, 1927, p. 495, (Natal coast).
pl. 21, fig. 1 (copied Day)

Depth $4\frac{1}{4}$; head $4\frac{1}{4}$, width $1\frac{2}{5}$.
 Snout $4\frac{4}{5}$ in head; eye $4\frac{3}{4}$,
 slightly greater than snout,
 about 2 in interorbital, adipose
 lids wide; mouth cleft reaches
 eye, width $3\frac{1}{5}$ in head, would
 nearly form right angle;
 interorbital $2\frac{1}{2}$, low.

Scales 40 in lateral series
 to caudal base; 12 transversely,
 about 30? predorsal forward
 to front of snout. Very few
 scales shown on bases of soft
 vertical fins. Ventral with scaly
 axillary flap $1\frac{7}{8}$ in fin, no
 indication of scaly flap at
 pectoral axil.

D. IV — I, 8, I, second spine
 2 in head, first branched ray
 2; A. II, 8, I, first branched ray
 $1\frac{4}{5}$; least depth of caudal

2275

Peduncle $2\frac{1}{8}$; pectoral $1\frac{1}{2}$, rays
II, 15; ventral rays I, 5, fin 2
in head; caudal $3\frac{1}{2}$ in rest of
fish, deeply forked.

Back dark, below whitish.
Hind pectoral edge narrowly
pale and dark or blackish &
small spot at base close below
fin origin. Length 450 mm.

(Klunzinger.)

Victoria, South Australia?

Mugil marginalis De Vis

Mugil marginalis De Vis, Proc.

Linn. Soc. New South Wales, vol. 9,
p. 870, 1885 (type locality, Brisbane).

— McCulloch and Whitley, Mem.

Queensland Mus., vol. 8, pt. 2, p.

141, July 7, 1925 (reference). — McCulloch, Mem. Austral. Mus., vol. 5, pt. 1,

p. 114, June 29, 1929 (reference).

Mugil marginatus Saville Kent,

Great Barrier Reef, p. , 1893.

(lapsus for marginalis)

7209 and 7210. Leparri market.
November 19, 1908. Both 610 mm.
1427. Macassar. December 26, 1909.
Length 455 mm.

Depth $4\frac{3}{4}$; head $4\frac{3}{4}$. Snout $4\frac{1}{3}$ in head; orbit $3\frac{1}{3}$, greater than snout, adipose lids broad; maxillary exposed; upper lip thin; mouth cleft length half width, mandibular angle little more than right angle; interorbital $2\frac{3}{4}$ in head; preorbital entire in front, tapers to obtuse point, slightly armed behind.

Scales 40 or 41 in lateral series; 13 transversely, 25 predorsal forward to snout. Pectoral without axillary scale.

D. IV - I, 8, first fin origin midway between snout end and caudal base, opposite eleventh lateral scale; A. III, 8, nearly opposite second dorsal; caudal moderately forked; pectoral

reaches first dorsal, above middle in body depth; ventral origin nearer pectoral than first dorsal.

Body with alternate clear and clouded lines. Dorsals and caudal with broad dark and narrow black edge. Obscure blue spot on pectoral base.

Length 140 mm, (De Vis.)
Queensland.

Mugil subviridis Valenciennes

Mugil subviridis Valenciennes,
Hist. Nat. Poiss., vol. 11, p. 115, 1836
(type locality, Pondicherry; Ganges River).

— Bleeker, Verh. Batavia. Genoot.

(Nal. Ich. Bengal), vol. 25, p. 48, 1853
(reference). — Günther, Cat. Fish.

Brit. Mus., vol. 3, p. 423, fig.

head), 1861 (Madras). — Day,

Fishes of Malabar, p. 138, 1865

(Cape York). — Günther, Ann.

Magn. Nat. Hist., ser. 3, vol. 20,

p. 64, 1867 (Cape York). — Day,

Fishes of India, pt. 2, p. 353, 1876

(type). — Martens, Preuss. Exped.

Ost Asien, vol. 1, p. 395, 1876

(Manila). — Day, Fauna British

India, Fishes, vol. 2, p. 348, 1889

(type). — Elera, Cat. Fauna

2130 and 2131 [D. 5318]. China Sea,
vicinity Formosa ($21^{\circ}32'N.$, $117^{\circ}46'E.$).
In 340 fathoms. November 5, 1908.
Length 172 to 175 mm.

4364 [D. 5312]. China Sea, vicinity
Hong Kong ($21^{\circ}30'N.$, $116^{\circ}32'E.$). In 140
fathoms. November 1908. Length 70 mm.

Filipinas, vol. 1, p. 537, 1895 (Manila).

— Ogilby, Ann. Queensland Mus.,
No. 9, ^{pt. 1} p. 21, 1908 (reference).

— Weber, Siboga Exped., vol. 57,
Fische, p. 138, 1913 (Lombok). —

[McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2,
p. 141, July 7, 1925 (reference).

[— Weber and Beaufort, Fishes
Indo Austral. Archip., vol. 4, p.
243, 1922 (Lombok; Borneo; Celebes).

Liza subviridis McCulloch, Mem.
Austral. Mus., vol. 5, pt. 1, p. 117,
June 29, 1929 (reference).

944

Genus Lateolabrax Bleeker.

Lateolabrax Bleeker, Verh. Batav.

Genootsch. (Japan), vol. 26, 1857, pp. 4,
53. Type Labrax japonicus Cuvier,
monotypic.

Body compressed. Mouth large, protractile.
Maxillary exposed, with supplemental bone.
Villiform teeth in jaws and on vomer
and palatines; tongue smooth.
Preopercle serrated, with few strong
antrorse spines on lower edge. Opercle
ends in spine. Gill membranes separate.
Pseudobranchiae present. Gill rakers
long and slender. Branchiostegals 7.
Vertebrae 35, of which 18 caudal. Scales
small, smooth or ciliated. Head
scaly. Lateral line complete, tubes
straight and each occupies nearly

Mugil alcocki Ogilby, Ann.
Queensland Mus., No. 9, pt. 1, p.
21, 1908 (on Günther 1861).

51
on upper surface of head. Vertical
fins gray, with large blackish
blotches, at least basally and
on dorsal and anal, more or
less as inclined or longitudinal
dark bars or streaks terminally.
Paired fins pale or whitish,
with few dark spots.

Serranidae

Cephalopholis boenack (Bloch).

One, 180 mm., Bangkok.

Serranus fasciatus (Forsk.)

One, 225 mm., Bangkok.

Serranus malabaricus (Schneider).

One, 187 mm., Bangkok.

Gerridae

Gerrus setifer (Buchanan-Hamilton).

One, 92 mm., Kratt.

Landidae

Landus nebulosus (Gray).

2282

Mugil ruthveni Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 70, 1918, p. 3, fig. 1 (type
locality, Philippines).

Mugil philippinus Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
vol. 70, 1918, p. 7, fig. 3 (type
locality, Philippines).

whole length of scale. Dorsal with 11 or 12 spines, soft fin preceded by 1 or 2 spines and rays 12 to 14, spinous portion longer than soft portion. Anal spines 3, rays 8 or 9, fin short. Caudal emarginate. Pectoral rays 16 to 18, asymmetrical, obtusely pointed, upper rays longest. Ventral behind pectoral, with strong spine, fins close together.

China, Japan.

Depth $3\frac{2}{3}$ to $3\frac{4}{5}$; head $3\frac{2}{3}$ to $3\frac{4}{5}$, width $1\frac{1}{2}$. Snout $3\frac{4}{5}$ to 4 in head; eye 4 to $4\frac{1}{2}$, subequal ^{with} or slightly less than snout, $1\frac{4}{5}$ in interorbital; broad adipose lids cover $\frac{1}{3}$ of iris; maxillary exposed, reaches $\frac{4}{5}$ or to eye; mouth would form broadly obtuse angle; mouth width $3\frac{1}{5}$ to $3\frac{2}{5}$ in head; upper lip width $\frac{1}{2}$ to $\frac{2}{3}$ of pupil; interorbital $2\frac{2}{7}$ to $2\frac{3}{5}$ in head, broadly convex; lower preorbital edge with few obsolete denticles. Gill rakers 30 to 35 + 46 to 48, slender, fine, $2\frac{1}{4}$ to $2\frac{1}{2}$ in gill filaments, which subequal with eye.

Scales 30 in lateral axial series from gill opening to caudal base; 10 or 11 transverse, 11 or 20 preopercular. Axillary pectoral scale

666

Cheilodipterus lineatus (Linnaeus).

- Perca lineata Linnaeus, Syst. Nat., ed. 10, ^{vol. 2} 1758, p. 298. Habitat?; ed. 12, 1766, p. 489.
— Forsk., Descript. Animal., 1777, p. 42.
— Bonnaterre, Tabl. Ichth., 1788, p. 134.
— Gmelin, Syst. Nat. Linn., ^{vol. 2} 1789, p. 1319.
— Rüppell, Neue Wirbelth., Fische, 1835, p. 89.

Chilodipterus lineatus Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 248 (Red Sea
and Madagascar). — Playfair, Fishes
of Zanzibar, 1866, p. 21 (Zanzibar and
Uden). — Boulenger, Proc. Zool. Soc.
London, 1887, p. 656 (Muscat). — Day,
Fauna Brit. India, vol. 1, 1889, p. 502,
fig. 151. — Günther, Abhandl. Bayer.
Akad. Wiss., vol. 26, pt. 6, 1913, p. 10
(Mekran and Oman).

$3\frac{1}{2}$ in fin. Soft dorsal and anal
scaly basally, likewise caudal
and pectoral.

D. IV — I, 8, first spine $1\frac{2}{5}$ to
 $1\frac{2}{5}$ in head; first ray $1\frac{4}{5}$ to $1\frac{7}{8}$; V
soft dorsal origin over last third of anal base;
A. III, 8, I, first ray $1\frac{4}{5}$ to $1\frac{7}{8}$,
third spine $2\frac{4}{5}$ to $3\frac{1}{2}$; least depth
of caudal peduncle $2\frac{1}{5}$ to $2\frac{1}{4}$;
pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$; ventral $1\frac{1}{3}$ to
 $1\frac{2}{5}$; caudal $3\frac{1}{4}$ to $3\frac{1}{2}$ in rest of
fish, emarginate behind.

Brown, tinged with olivaceous
above, below whitish. Fins pale,
dorsal and caudal tinged with
rusty, sometimes latter with slight
dark border behind. Philippines,
India, East Indies, Queensland.

23938. Talise Island, north of
Celebes. November 9, 1909. Length 71 mm.

23532 and 23577. Tidore Island,
south of Ternate. November 25, 1909.
Length 85 mm.

A. N. S. P., No. 47478. Philippines.
Commercial Museum of Philadelphia.
Length 240 mm. Type of Mugil
anthracinus.

A. N. S. P., No. 47481. Philippines.
Commercial Museum of Philadelphia.
Length 237 mm. Type of Mugil
philippinus.

A. N. S. P., No. 47482. Philippines.
Commercial Museum of Philadelphia.
Length 242 mm. Paratype of Mugil
philippinus.

21125. Cape Kait, Libani Bay, Celebes.
December 29, 1909. Length 78 mm.

9503 and 23497. Dodepo and Pasejogo
Islands, Gulf of Boni, Celebes.

November 16, 1909. Length 53 to 67 mm.

24037. Labuandata Bay, Gulf of
Boni, Celebes. December 18, 1909. Length
90 mm.

23981. Limbe Strait, Celebes.
November 11, 1909. Length 66 mm.

23445. Dowarra Island, Gillolo.
December 2, 1909. Length 83 mm.

23104. Powati Harbor, Makyau Island.
November 28, 1909. Length 70 mm.

23694 and 23695. Gomomo Island.
December 3, 1909. Length 60 to 62 mm.

2286

Mugil trichilus Vaillant and Sauvage

Mugil trichilus Vaillant and
Sauvage, Rev. Mag. Zool., ser. 3,
vol. 3, p. 287, 1875 (type locality,
Hawaiian Islands). — Fowler,
Bull. Bishop Mus., no. 22, p. 32,
1925 (Samoa); Mem. Bishop
Mus., vol. 10, p. 123, 1928 (type
of Mugil caldwelli; Hawaiian
Islands; Tongatabu; Fiji;
Tahiti).

Preopercle serrated, with strong
antrorse spines on lower edge.
Opercle with strong spine. Gill
membranes separate. Pseudobranchiae
present. Gill rakers very short.
Branchiostegals 7. Lower pharyngeals
united. Vertebral 25, of which 14
caudal. Scales rather large, strongly
ciliated. Head scaly, maxillary and
mandible naked. Lateral line complete,
tubes with ascending tubule extending
to end of scale. Dorsal with 13 or 14
spines, rays 9 to 11, spinous part
much longer than soft, which scaly
basally. Anal with 3 spines and 5
rays, scaly basally. Caudal rounded.
Pectoral with 13 or 14 rays, rounded,
subsymmetrical. Ventral with strong
spine, placed behind pectoral base.

2287

Mugil caldwelli Fowler, Proc.
Acad. Nat. Sci. Philadelphia,
1900, p. 524, pl. 19, fig. 4 (type
locality, Samoa). — Jordan and
Seale, Bull. Bur. Fisher., vol.
25, p. 217, 1905 (note).

Mugil belcartii (not Günther)
Fowler, Proc. Acad. Nat. Sci.
Philadelphia, 1900, p. 500 (Hawaii);
1903, p. 743 (same materials).

Eastern Indian and Western Pacific Oceans. This genus and its genotype have so great a superficial resemblance to certain small scorpaenoids that they have repeatedly been referred to them.

Depth $3\frac{3}{5}$ to $4\frac{1}{5}$; head $3\frac{1}{4}$ to $3\frac{3}{4}$, width $1\frac{1}{2}$ to $1\frac{3}{4}$. Snout $3\frac{3}{4}$ to $3\frac{2}{3}$ in head; eye 4 to $4\frac{1}{8}$, with moderately broad adipose lids, scarcely or not developed in young; maxillary concealed, exposed in young, $3\frac{1}{2}$ to $3\frac{3}{4}$ in head; mouth as viewed below would form obtuse angle; interorbital $2\frac{1}{3}$ to $2\frac{2}{3}$, broadly convex; lower preorbital edge finely denticulate. Gill rakers 32 to 37 + 44 to 65, fine, $\frac{3}{4}$ gill filaments, which equal eye.

Scales 32 to 35 in lateral series to caudal base; 10 or 11 transversely, 13 to 16 predorsal forward to head. Soft dorsal and anal scaly. Pectoral with pointed axillary basal scale. Scales

with 5 to 10 marginal basal striae.

D. IV - I, I, 7, first spine $1\frac{1}{2}$ to $1\frac{3}{5}$ in head, first branched ray $1\frac{1}{5}$ to $1\frac{3}{5}$; A. III, I, 8, first branched ray $1\frac{9}{10}$ to $2\frac{1}{10}$; caudal equals head, deeply emarginate; least depth of caudal peduncle $2\frac{1}{3}$ to $2\frac{1}{2}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{4}$; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Dull olivaceous brown, scarcely paler below. No dark spot at pectoral origin.

Polynesia, Hawaii. In my "Fishes of Oceania" the distribution is given wrongly as "India, East Indies, Melanesia." This statement applies to the species following or Mugil speigleri.

U. S. N. M., No. 82810. Fiji. ²²⁹⁰
Wilkes Exploring Expedition.
Length 160 mm.

U. S. N. M., No. 82959. Tahiti.
Wilkes Exploring Expedition.
Length 90 to 95 mm. Three
examples.

U. S. N. M., No. 83230. Tongatabu.
Wilkes Exploring Expedition.
Length 145 mm.

A. N. S. P., No. 9841. Samoa.
dr. H. C. Caldwell. Length 132 mm.
Type of Kingil caldwelli.

Mugil cephalus Linnaeus

2291

Mugil cephalus Linnaeus, Syst. nat.,
ed. 10, pt. 1, p. 316, 1758 (type locality,
European Ocean); ed. 12, pt. 1, p. 520,
1766. — Bloch, Naturg. ausl. Fische,
vol. 8, p. 165, 1794 ("allen vier Welt-
theilen"); vol. 9, p. 114, 1795 (Tranquebar).
~~de Walbaum, Nat. Hist. Poiss., vol. 3, p. 225~~
~~de Walbaum, Nat. Hist. Poiss., vol. 3, p. 225~~ — Lacepede, Hist. nat.
Poiss., vol. 5, pp. 384, 386, 1803 ("toutes
les mers").

— Kittlitz, Denkw. Reise Mikrones.,
vol. 2, p. 20, 1858 (Palau).

— Günther, Cat. Fish. Brit. Mus., vol.
3, p. 417, 1861 (Mediterranean; Madeira;
Nile; fresh water lakes. Tunis; West
Africa). — Schmeltz, Cat. Mus. Godeffroy, no.
7, p. 50, 1879 (Gayndah, Tonga Islands).

Depth $2\frac{3}{4}$ to $2\frac{4}{5}$, head $2\frac{1}{3}$ to $2\frac{3}{4}$, width $2\frac{1}{4}$ to $2\frac{1}{3}$. Snout $4\frac{1}{4}$ to $4\frac{2}{5}$ in head from snout tip; eye $2\frac{1}{3}$ to 3, much greater than snout or interorbital; maxillary reaches $\frac{1}{5}$ in eye, expansion 5, length $2\frac{2}{3}$ to $2\frac{7}{8}$ in head from snout tip; teeth very minute, in ^{narrow} bands in jaws, on vomer and palatines and narrow median band on tongue; interorbital $4\frac{1}{3}$ to $4\frac{2}{5}$, slightly convex; postero-supraorbital ridge with 1 or 2 serrae; lower preorbital edge with 7 or 8 serrae and nearly same number of less distinct ones on preorbital beel; lower preopercle edge and beel finely serrate, though serrae usually more numerous on former and broad triangular spine at angle of ridge usually moderate. Gill rakers 9 or 10 + 18 to 20, finely lanceolate, 2 to $2\frac{1}{5}$ in eye; gill

— Macleay, Proc. Linn. Soc. New South
Wales, vol. 8, p. , 1883 (Barrabin
and Mary Rivers . . . Saville-Kent,
Great Barrier Reef, p. , 1892
Moreton Bay; Cooktown). — Jenkins,
Bull. U. S. Fish Comm., vol. 22, p. 438,
1902 (1903) (Honolulu). — Jordan and
Evermann, Bull. U. S. Fish Comm., vol.
23, pt. 1, p. 139, fig. 48, 1903 (1905)
(Honolulu; Kailua). — Jordan and
Seale, Proc. U. S. Nat. Mus., vol. 29, p.
521, 1905 (Hong Kong; Shanghai); Bull.
Bur. Fisher., vol. 25, ~~1905~~ p. 217,
1905 (1906) (reference). — Seale,
Occas. Pap. Bishop Mus., vol. 6, no. 1, p.
17, 1906 (Tahiti, Raiatea, Shortland).
— Jordan and Starks, Proc. U. S. Nat.
Mus., vol. 31, p. 576, 1906 (Port Arthur,
Manchuria). — Waite, Rec. Canterbury
Mus., vol. 1, no. 1, p. 15, April 25, 1907.

817

Ambassis vaivasensis Jordan and Seale,
Bull. Bur. Fisher., vol. 25, 1905 (1906), p.
254, fig. 47. Vaivase River, Apia, Samoa.
— Fowler, Bishop Mus. Bull., no. 22, 1925,
p. 32 (Samoa).

(reference). — Jordan and Richardson,
 Bull. Bur. Fisher., vol. 27, p. 244,
 1907 (1908) (Calayan). — Snyder,
 Proc. U. S. Nat. Mus., vol. 42, p. 410,
 1912 (Misaki; Tokyo). — Seale,
 Philippine Journ. Sci., vol. 9, p. 61, 1914
 (Hong Kong). — Boulenger, Cat. Fresh
 — Tanaka, Fishes of Japan, vol. 3,
 p. 50, pl. 13, figs. 42-45, 1911; vol. 4, p. 51,
 October 15, 1911 (Tokyo). ^{August 15.}

Water Fish. Africa, vol. 4, p. 80, fig. 47,
 1916 (Cape of Good Hope, Port
 Elizabeth, Durban, Natal). —
Gilchrist and Thompson, Ann. Durban
 Mus., vol. 1, no. 4, p. 314, 1917 (reference).
 — Ishima, Ann. Carnegie Mus., vol.
 12, nos. 2-4, p. 265, 1917 (Fukoku).
 — Fowler, Copeia, no. 122, p. 52,
 November 20, 1922 (Hawaiian Islands).
 — Ishima, Ann. Carnegie Mus., vol. 13,
 nos. 3-4, p. 242, April 25, 1922

Ambassis batjanensis Bleeker.

Ambassis batjanensis Bleeker, Nat. Tijds.
Ned. Indië, vol. 9, 1855, p. 196. Batjan,
in fresh water. — Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 225 (Amboyna). —
Bleeker, Atlas Ichth. Ind. Néerl., vol. 8,
1876-77, p. 138, pl. (76) 354, fig. 4 (Singapore,
Java, Bali, Celebes, Sumbawa, Rotti,
Batjan, Borneo, Amboina). — Károli, Termesz.
Füzetek, Budapest, vol. 5, 1882, p. 151
(Change River, Singapore). — Meyer, Ann.
Nac. Españ. Hist. Nat. Madrid, vol. 14, 1885,
p. 11 (Manila Bay). — Weber, Zool. Ergebn.
Reise Néderl. Ost Indien, vol. 3, 1894, p.
409 (Koinino River, Kupang, Timor);
Zool. Forschungsr. Austral. Semon, vol. 5,
1895, p. 263 (fresh waters Amboina). — Elera,
Cat. Fauna Filip., 1895, p. 469 (Río Pasig, Manila).
— Steindachner, Abhandl. Senckenberg. Naturf.
Gesell., vol. 25, 1900, p. 415 (Oba River, Halmahera).

Taihoku; Italy). — Fowler, Bull.
 Bishop Mus., no. 22, p. 25, 1925
 (Honolulu). — McCulloch and Whitley,
 Mem. Queensland Mus., vol. 8, pt. 2,
 p. 140, July 7, 1925 (reference). —
Fowler and Ball, Bull. Bishop Mus.,
 no. 26, p. 10, 1925 (Laysan, Lisiansky,
 Ocean Islands, French Frigates Shoal).
 — Reeves, Journ. Pan. Pac. Res. Inst.,
 vol. 3, no. 2, p. 8, 1927 (Chingwangtao;
 Hong Kong). — Fowler, Bull. Bishop
 Mus., no. 38, p. 9, 1927 (Molokai;
 Ocean Island; Honolulu). — Evermann
 and Shaw, Proc. Cal. Acad. Sci., vol.
 16, no. 4, p. 114, January 31, 1927
 (Hanychow). — Fowler, Mem. Bishop
 Mus., vol. 10, p. 125, 1928 (Honolulu,
 Kailua, Molokai, Waikiki, Laysan,
 Lisiansky, Ocean Island, French Frigates
 Shoal, Oahu, Guam, Ascension Island;

815

7 examples. Manila Bay. December 11,
1907. Length 60 to 71 mm.

7 examples. Manila Harbor. December
30, 1907. Length 55 to 65 mm.

57 examples. Manila Harbor. December
31, 1907. Length 52 to 70 mm.

7 examples. Manila Harbor. January
31, 1908. Length 55 to 67 mm.

2 examples. Manila Harbor. March
16, 1908. Length 61 to 75 mm.

19500 and 19501. Manila Market.
December 12-18, 1909. Length 71 to 74 mm.

11 examples. Palawan. December 25,
1908. Length 49 to 63 mm.

145 examples. Philippines. Length 55 to
60 mm.

19728. Tacloban market. July 25, 1909.
Length 55 to 63 mm. 2 examples.

1 example. Tara Island, Mindoro Strait.
December 15, 1908. Length 15 mm.

Proc. Acad. Nat. Sci. Philadelphia,
1929, p. 603 (Hong Kong). ✓ Schmidt,

— McCulloch, Mem. Austral. Mus., vol.
5, pt. 1, p. 114, June 29, 1929 (reference).

Japan Sea, Bombay); Bull. Acad.
Sci. U. R. S. S., p. 1138, 1930 (Suruga).

— Lowerby, Nat. Manchuria, vol.
p. 157, 1930 (Pei tuo Hsiao). — Jacot,
Sci. Rep. Tohoku Imp. Univ., ser.
4, Biol. vol. 5, no. 4, p. 925, December
1930 (Tingtao; variation). —

Schmidt, Bull. Acad. Sci. U. R. S. S.,
p. ~~925~~ ¹⁰⁷, 1931 (Nagasaki;
^{p. 179} Sumiogawa River).
Alabama). — Anonymous, Illustrat.

Jap. Aquat. Plants Animals, vol. 1,
pl. 21, fig. 1, ¹⁹³¹ — Fowler, Mem. Bishop
Mus., vol. 11, no. 5, p. 324, 1931 (Honolulu).

— Chevey, Inst. Ocean. Indo Chine, 19^e Note,
p. 19, August 25, 1932 (Annam).

common
v. Pac. Con
up Kur)
Kagen

Proc. Acad. Nat. Sci. Philadelphia,
1929, p. 603 (Hong Kong). ✓ Schmidt,
Trans. Pac. Comm. Acad. Sci. U. S.
S. S. R., vol. 1, p. 27, 1930 (Kominot;
Japan Sea; Bombay); Bull. Acad.
Sci. U. R. S. S., p. 1138, 1930 (Suruga).
— Lowerby, Nat. Manchuria, vol. ,
p. 157, 1930 (Pei tuo. Ho). — Jacot,
Sci. Rep. Tohoku Imp. Univ., ser.
4, Biol. vol. 5, no. 4, p. 925, December
1930 (Tingtao; variation). —
Schmidt, Bull. Acad. Sci. U. R. S. S.,
p. ~~925~~ ^{p. 179} ~~December~~ 107, 1931 (Nagasaki;
Obama) ^(Sumiogawa River). — Anonymous, Illustrat.
Jap. Aquat. Plants Animals, vol. 1,
pl. 21, fig. 1, ¹⁹³¹ — Fowler, Mem. Bishop
Mus., vol. 11, no. 5, p. 324, 1931 (Honolulu).
— Chevey, Inst. Ocean. Indo Chine, 19^e note,
p. 19, August 25, 1932 (Annam).

p. 224 (Vall, *Monograph of the*

Islands, Funafuti). — J. Schmidt, Trans. Pac. Conf.

Acad. Sci. USSR, vol. 1, 1930, p. 52, pl. 1, fig. 1 (Kominato, Riu Kiu).

Diapterus argyreus Bleeker, Verslagen

129, p. 60

mus. J.

V. H. R., v

group - the

814

second and third dorsal spines
dusky with age. Lips and
iris all pale or whitish.

Socotra, Zanzibar, Natal, Mauritius,
Seychelles, India, Andamans,
Cochin, Tonkin, East Indies, Philippines,
China. Many examples we find do
not have the second membrane of
the spinous dorsal and the hind caudal
edge blackish. The second and
third dorsal spines are variably
subequal.

22467. Cavite and San Roque markets.

June 27, 1908. Length 67 mm.

5519 and 5530. Malabon market. August 8, 1908. Length 50 to 58 mm.
1 example. Manila Bay. December 6,

1907. Length 65 mm.

1 example. Manila Bay. December 7,

1907. Length 67 mm.

1 example. Manila Bay. December 8, 1909. Length 53 mm.
45162 ~~examples~~. Manila Bay. December 9,

1907. Length 60 to 68 mm. 4 examples.

Mugil crenilabis öur Forsk.,
 Descript. Animal., pp. 14, 74, 1775
 (type locality, Red Sea, Arabia).
Walbaum, Artedi Pisc., vol. 3, p. 227, 1792 (copied).

Mugil öur, Rüppell, Neue Wirbelth.,
 Fische, p. 131, 1835 (Red Sea).

— Klunzinger, Verh. Zool. Bot. Gesell.
 Wien, vol. 20, p. 829, 1870 (Red Sea).

~~— Blanford, Zool. Tijds. Dierk.,
 vol. 4, p. 1, 1873 (1874) (China).~~

— Day, Fishes of India, pt. 2, p. 353,
 pl. 75, fig. 3, 1876 (Bombay). —

Klunzinger, Fisch. Roth. Meer., p. 132,
 pl. 10, fig. 1b, 1884. — Steindachner,

and Döderlein, Denks. k. k. Wiss.
 Wien, math.-naturw. Kl., vol. 49, pt. 1,
 p. 266, 1885 (Japan). — Day, Fishes

of India, Suppl. p. 800, 1888
 (reference); Fauna British India,
 Fishes, vol. 2, p. 348, fig. 114, 1889.

above lateral line, 6 below to lower section, 13 to 15 predorsal forming median keel to occiput 2 rows on cheek and preopercular flange naked; caudal covered with small scales basally; dorsals and anals each with basal sheath of scales one row in width. Scales with 4 or 5 short basal radiating striae marginal; circuli moderate.

D. VII, I, 9, V, second spine $1\frac{1}{5}$ to $1\frac{1}{4}$ in total head length, first ray 2 to $2\frac{1}{8}$; A. III, 7, V, third spine $1\frac{2}{3}$ to $1\frac{3}{4}$; caudal $1\frac{1}{8}$ to $1\frac{1}{5}$, forked; least depth of caudal peduncle $2\frac{1}{2}$ to $2\frac{2}{3}$; pectoral $1\frac{1}{4}$ to $1\frac{2}{5}$; ventral $1\frac{1}{2}$ to $1\frac{2}{3}$.

Pale brown, paler or whitish below. Median silvery lateral band. Membrane between ~~first~~

~~Rugby, Proc. Roy. Soc. Tasmania,~~
~~1896-1897 (Hawking)~~

Rutter, (Proc. Acad. Nat. Sci.
 Philadelphia), p. 70, 1897 (Swatow).
 — Jordan and Snyder, Conn.
 Zool. Japon., vol. 3, p. 62, 1901.
 (reference). — Jordan and Evermann,
 Proc. U. S. Nat. Mus., vol. 25, p. 332,
 1903 (Taihoku). — Jordan and Richardson,
 Mem. Carnegie Mus., vol. 4, no. 4, p.
 176, 1909 (Geran, Keelung, Taihoku).
 — Franz, Abhandl. Kon. Bayer.
 Akad. Wiss., vol. 4, Suppl. Band
 1, p. 25, 1910 (Yokohama; Fukuoka).
 — Zuymayer, Abhandl. Kon.
 Bayer. Akad. Wiss., vol. 26, pt. 6,
 p. 19, 1913 (Dascht River 100 km.
 from mouth, Basol River,
 Balutschistan). — Pellegrin,
 Bull. Soc. Zool. France, vol. 39,

Depth $2\frac{1}{2}$ to $2\frac{2}{3}$; head $2\frac{2}{3}$ to $2\frac{3}{4}$, width $2\frac{1}{2}$ to $2\frac{3}{5}$. Snout $4\frac{1}{2}$ to 5 in head measured from upper jaw tip; eye 3 to $3\frac{1}{8}$, greater than snout or interorbital; maxillary reaches opposite front eye edge, Expansion 4 in eye, length $2\frac{4}{5}$ to 3 in head from snout tip; teeth extremely minute, barely evident in jaws and on vomer, apparently none on palatines or tongue; interorbital $3\frac{4}{5}$ to $4\frac{1}{8}$, slightly convex; usually 5 supraocular serrae, last largest; 5 or 6 serrae on each lower preorbital edge; lower preopercle ridge and edge serrate, hind edges of both entire. Gill rakers $10+21$, finely lanceolate, $1\frac{4}{5}$ in eye; gill filaments $\frac{2}{5}$ gill rakers.

Scales 13 or 14 + 14 to caudal base and 3 more on latter; 4 scales

p. 224, 1914 (Fort Dauphin, Madagascar).
— Boulenger, Cat. Fresh Water Fish.
Brit. Mus., vol. 4, p. 48 (copied),
1916 (Socotra, East Madagascar,
Rodriguez). — Ashima, Ann.
Carnegie Mus., vol. 12, nos. 2-4, p.
270, 1919 (Formosa). — Wu, Contrib.
Biol. Lab. Sci. Soc. China, vol. 5,
no. 4, p. 78, fig. 62, 1929 (Amoy).
— Chu, Biol. Bull. St. John's
Univ., ~~vol.~~ no. 1, p. 104, 1931 (reference).
— Borodin, Bull. Vanderbilt
Marine Mus., vol. 1, art. 3, p. 76,
1932 (Papeete, Tahiti).
Mungil deur Pellegrin, Mem. Acad.
malgache, vol. 14, p. 170, fig. 93,
1933 (compiled).

Malabar, 1867, p. 16; Proc. Zool. Soc.

London, 1870, p. 681 (Andamans). —

Károli, Termesz. Füzetek, Budapest, vol. 5, 1882, p. 151 (Singapore). — Elera,

Cat. Fauna Filip., 1895, p. 467 (Cebu).

— Beaufort, Bijdr. Dierk., Amsterdam, 1913, p. 113 (Njanjef and Majalibit Bay, Waigiu).

Chanda dussumieri Cantor, Cat. Malayan Fishes, 1850, p. 6 (Sea of Pinang).

Ambassis vachellii (non Richardson) Peters, Monatsb. Akad. Wiss., Berlin, 1868, p. 255 (Pulo Brani, Singapore).

Priopis argyrozona (Kuhl) Valenciennes, Hist. Nat. Poiss., vol. 6, 1833, p. 503. No locality [Java].

Mugil tang Bloch, Naturges. Ausl.
Fische, Vol. 8, p. 171, pl. 395, 1794
(type locality, "guineischen Küste");
vol. 9, p. 114, 1795 ("Malayen"). —
Schneider, Syst. Ichth. Bloch,
p. 115, pl. 33, fig. 1, 1801 (copied).

Chrysophrys unicolor Quoy and Gaimard,
Voy. Uranie, Zool., — 1824, p. 229.
~~Chrysophrys~~ "Isle Birck - Hatichs" (Dick
 Hartog Island, Australia). (Not China
 Sea reference.)

Pagrus unicolor Valenciennes, Hist. Nat.
 Poiss., vol. 6, 1830, p. 162 (types). $\frac{1}{m}$
Richardson, Ichth. China Japan, 1846, p.
 242 (King George's Sound, West Australia).
 $\frac{1}{m}$ Günther, Cat. Fishes Brit. Mus., vol. 1,
 1859, p. 468 (Cape?, New Zealand, Australia).
 $\frac{1}{m}$ Bleeker, Verslagen Kon. Akad. Wetensch.
 Amsterdam, vol. 15, 1863, p. 445 (Port
 Jackson). $\frac{1}{m}$ Schmeltz, Cat. Mus. Godeffroy, no. 1, 1864, p. 8 (South Seas); no. 2, 1865, p. 6 (South Seas).
 $\frac{1}{m}$ Kner, Reise Novara, Fische,
 1865, p. 85 (Ouekland). $\frac{1}{m}$ Steindachner,
 Sitz. Ber. Akad. Wiss. Wien, math.-
 naturw. Klasse, vol. 53, pt. 1, 1866, p. 432
 (Port Jackson). $\frac{1}{m}$ Schmeltz, Cat. Mus.
 Godeffroy, no. 4, 1869, p. 14 (Port Macleay).
 $\frac{1}{m}$ Castelnau, Proc. Zool. Acclimat. Soc.

Mugil constanciae Valenciennes, Hist.
nat. Poiss., vol. 11, p. 101, 1836 (type
locality, fresh waters, Cape of Good
Hope). — A. Smith, Zool. South Africa,
pl. 28, figs. 1-1a, 1846 (fresh water
lakes and rivers). — Castelnau,
Mém. Poiss. Afrique Australe, p.
48, 1861 (Cape of Good Hope). —
Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 418, fig. (head), 1861
(Cape of Good Hope). — Webers,
Zool. Jahrb., vol. 10, pt. 2, p. ,
1897 (Cape Colony). — Gilchrist,
Cat. Fish. South Africa, vol. 1, p. 136,
1902 (reference). — Regan, Linn.
Natural Mus., vol. 1, no. 3, p. 273,
1906 (Durban Bay).

810

Proc. U. S. Nat. Mus., vol. 71, 1927, p. 6
(Benkoelen, Sumatra). — Fowler, Proc.
Acad. Nat. Sci. Phila., 1927, p. 75 (Vigan
and Orani, Philippines). — Barnard, Ann.
South Afr. Mus., vol. 21, 1927, p. 644 (Natal coast).

Priopis gymnocephalus Jordan and Seale,
Proc. U. S. Nat. Mus., vol. 28, 1905, p. 780
(Negros). — Seale, Philippine Journ. Sci., vol. 5, no. 4,
1910, p. 274 (Sandakan, Borneo).
Ambassis dussumieri Cuvier, Hist. Nat. Poiss.,
vol. 2, 1829, p. 181. Malabar. — Valenciennes,
Hist. Nat. Poiss., vol. 6, 1830, p. 503 (Moluccas);
vol. 9, 1833, p. 43 (Mauritius and Seychelles).
— Duoy and Gaimard, Voy. Astralabe, Zool.,
1834, p. 650, pl. 1, fig. 3 (Amboina and
Celebes). — Günther, Cat. Fishes Brit. Mus.,
vol. 1, 1859, p. 225 (China). — Kner, Reise
Novara, Zool., vol. 1, pt. 5, 1865, p. 41
(Madras). — Playfair, Fishes of Zanzibar,
1866, p. 19 (Zanzibar). — Day, Fishes of

Mugil borbonicus Valenciennes, Hist.
Nat. Poiss., vol. 11, p. 113, 1836
[type locality, Bourbon, —
Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 410, 1861 (reference). —
Guichenot, Notes Ile Réunion,
vol. 2, p. 27, 1862. — Martens, Reise
 Ost Afrika, Becken, vol. 3, pt. 1,
p. 141, 1864 (Réunion). — Sauvage,
Hist. Nat. Madagascar, Poiss., p.
375, pl. 42, figs. 3-a, 1871 Madagascar.

Ambassis gymnocephalus (Lacépède).

Lutjanus gymnocephalus Lacépède, Hist. nat. Poiss., vol. 4, 1802, pp. 181, 216. Great Equinoxial Ocean [Indo-Pacific]; vol. 3, 1801, pl. 23, fig. 3.

Ambassis gymnocephalus Bleeker, Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 138, pl. (74) 352, fig. 3 (Sumatra, Pinang, Singapore, Bintang, Banka, Java, Madura, Bali, Celebes, Timor, Batjan, Borneo, Amboina). — Day, Fishes of India, pt. 1, 1875, p. 54, pl. 15, fig. 6 (Cochin); Fauna Brit. India, vol. 1, 1889, p. 489. — Fowler, Proc. Acad. Nat. Sci. Phila., 1905, p. 501 (Baram, Borneo). — Pellegrin, Bull. Soc. Zool. France, vol. 30, 1905, p. 85 (Tonkin). — Steindachner, Denks. Akad. Wiss. Wien, vol. 71, 1907, p. 129 (Tamarida, Sokoetra). — Weber, Siboga Exped., vol. 65, 1913, p. 217 (Aljanhar, north Java). ^{57, Fische,} Fowler and Bean,

Mugil cephalotus Valenciennes, Hist.
Nat. Poiss., vol. 11, p. 110, ^{July} 1836 (type
locality, Pondicherry).

— Eydoux and Soleyet, Voy. Bonite,
Zool., vol. 1, p. 175, pl. 4, fig. 4, 1841

Hawaiian Islands, — Cantor, Ann.
Mag. Nat. Hist., vol. 7, p. 484, 1842

(Chusan). — Bleeker, Verh. Batavia.
Genoot. (Madura), vol. 22, p. 5, 1849

(Bangcallang, Kammal, Sumanap);
Nat. Tijds. Ned. Indië, vol. 16, p. 277,
1858 (East Indies; diagnosis in key).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 419, fig. (head), 1861 (Amoy,
China, Chusan). — Kner, Reise

Kovara, Fische, p. 224, 1865 (Java,
Manila, Australia). — Bleeker,

Ned. Tijds. Dierk., vol. 4, p. 100, 1873
(1874) (~~reference~~) Rossi Fuli,

Madagascar, p. 143 (reference);

808

167 examples. Dip net off Kowloon
Rock (ship's side). September 12, 1908.
Length 15 to 25 mm.

185 examples. Electric light Kowloon
Rock. September 14, 1908. Length 17 to 40 mm.

Poiss. Madagascar, p. 45, pl. 2, fig. 1,
1874. — ~~Streets~~ Streets, Bull. U. S. Nat.

Mus., no. 7, p. 73, 1877 (Honolulu). —

Peters, Monatsb. Akad. Wiss. Berlin,
p. 923, 1880 (Ningpo). — Günther,

Rep. Voy. Challenger, vol. 1, pt. 6, p. 33,
1880 (Mary River, Tiaro). — Sauvage,

Bull. Soc. Philom., Paris, ser. 7, vol. 5,
p. 106, 1881 (Swatow). — Macleay,

Proc. Linn. Soc. New South Wales, vol.
4, p. 416, 1880 (copied); vol. 5, pt. 2,

p. 47, 1881 (reference); vol. 7, p. 362,
1882 (New Guinea). — Sauvage.

— Johnston, Proc. Roy. Soc. Tasmania, 1882,
p. 122.

— Streets, Bull. U. S. Nat. Mus., no. 7, p. 73, 1877

(Madagascar). — Elera, Cat. Fauna
Filipinas, vol. 1, p. 536, 1895 (Luzon,
Cavite).

Poiss. Madagascar, p. 45, pl. 2, fig. 1,
 1874. — ~~Streets~~ Streets, Bull. U. S. Nat.
 Mus., no. 7, p. 73, 1877 (Honolulu). —
Peters, Monatsb. Akad. Wiss. Berlin,
 p. 923, 1880 (Hingpo). — Günther,
 Rep. Voy. Challenger, vol. 1, pt. 6, p. 33,
 1880 (Mary River, Tiaro). — Sauvage,
 Bull. Soc. Philom., Paris, ser. 7, vol. 5,
 p. 106, 1881 (Swatow). — Macleay,
 Proc. Linn. Soc. New South Wales, vol.
 4, p. 416, 1880 (copied); vol. 5, pt. 2,
 p. 47, 1881 (reference); vol. 7, p. 362,
 1882 (New Guinea). — Sauvage,
 Hist. Nat. Madagascar, Poiss., p. 402,
 pl. 49 B, figs. 2-a, 3-a, 1891
 (Madagascar). — Elera, Cat. Fauna
 Filipinas, vol. 1, p. 536, 1895 (Luzon,
 Cavite).

5521. Catbalogan. April 15, 1908.

Length 218 mm.

807

1 example. Gomonno Island, Pitt
Passage. December 3, 1909. Length 38
mm.

1 example. Near [D. 5300] in sea weed,
 $20^{\circ}31'N$, $115^{\circ}49'E$, China Sea. August
8, 1908. Length 16 mm.

1 example. Dip net off Kowloon Dock,
vicinity Hong Kong, China. August 19, 1908.
Length 23 mm.

1 example. Dip net off Kowloon Dock
(ship's side). August 22, 1908. Length
31 to 35 mm.

3 examples. Electric light off Kowloon
Dock. September 8, 1908. Length 10 to
23 mm.

74 examples. Dip net off Kowloon
Dock (ship's side). September 9, 1908.
Length 11 to 25 mm.

Mugil cephalotes Martens, Preuss.

Expéd. Ost Asien, vol. 1, p. 395, 1876

(Yokohama). — Schmeltz, Cat. Mus. Godeffroy, No. 7, p. 50, 1879 (Gayndah, Tonga Islands).

Mugil gymnocephalus Swainson, Nat.

Hist. Animals, vol. 2, p. 234, 1839

(on Boontah Russell, Fishes of

Coromandel, vol. 2, p. 64, pl. 180, 1803,

type locality, Vizagapatnam).

5400, 5402, 5403. Ragay River, Ragay Gulf, Luzon. March 10, 1909. Length 45 to 86 mm. 19 examples.

15 examples. River at Pasacao, Ragay Gulf, Luzon. March 9, 1909. Length 41 to 69 mm.

18 examples. River at Port Dupon, Leyte. March 17, 1909. Length 46 to 62 mm.

24 examples. Santiago River, Pagapas Bay, Luzon. February 20, 1909. Length 45 to 92 mm.

5858. Small stream, Van Roque, Leyte. July 29, 1909. Length 35 mm.

2 examples. Tara Island, Mindoro Strait. December 15, 1908. Length 23 mm.

5 examples. Ambonia stream, Ambonia, Dutch East Indies. December 5, 1909. Length 30 to 47 mm.

4 examples. Sabatik Island, Borneo. October 1, 1909. Length 49 to 59 mm.

Mugil japonicus Vchlegel, Fauna
Japonica, Poiss., pts. 7-9, p. 134, pl.
72, fig. 1 ~~in part~~, 1845 (type locality,
Nagasaki). — Richardson, Ichth.
China Japan, p. 247, 1846 (seas of
China). — Bleeker, Verh. Batavia.
Genoot. (hal. Ichth. Japan), vol. 25,
p. (15) 41, 1853 (Nagasaki); (hal.
Ichth. Japan), vol. 26, p. 5 (Nagasaki);
Act. Soc. Sci. Ind. Néerl., vol. 3, no.
3, p. 6, 1857-58 (Japan); Ned. Tijds.
Dierk., vol. 4, p. 143, 1873 (1874) (reference).
— Ashima, Ann. Carnegie Mus., vol.
13, nos. 3-4, p. 243, April 25, 1922
(Inzampo, Kitabukun, Ioi,
Tamusi, Kuwaren River, Anpin,
Takao, Ito).

1 example. Buto River. June 18, 1909.
Length 25 mm.

10 examples. Nanjan River, east Mindoro.
June 5, 1908. Length 79 to 88 mm.

11935. Nonucan River, Camp Overton,
Mindanao. August 6, 1909. Length 39 to
69 mm. 14 examples.

1 example. North end Endeavor Strait,
Palawan Island. December 22, 1908. Length
72 mm.

2 examples. Port Jamelo, Luzon. July 13,
1908. Length 19 to 26 mm.

7 examples. Port Jamelo, two miles up river,
Luzon. July 13, 1908. Length 20 to 35 mm.

14 examples. Port San Pio Quinto, Camiguin
Island. November 11, 1908. Length 39 to 53 mm.

1 example. Port San Vicente. November 14,
1908. Length 48 mm.

6 examples. Pucot River, Mariveles, Manila
Bay. January 29, 1909. Length 53 to 93 mm.

Mugil macrolepidotus (not Rüppell)
Richardson, Ichth. China Japan,
 p. 249, 1846 (China Seas?). —
Jouan, Mém. Soc. Sci. Nat. Cherbourg,
 vol. 13 (ser. 2, vol. 3), p. 244, 1866
 (1868) (Hong Kong).

Mugil buntah Bleeker, Verh. Batavia.
 Genoots. (Nal. Ichth. Bengal), vol. 25,
 p. 48, 1853 (on Buntah Russell, Fishes of
 Coromandel, vol. 2, p. 64, pl. 180, 1803, type
 locality, Vizagapatam);

Nat. Tijds. Ned. Indië, vol. 2, 1856.
 p. 419, 1856 (Muntok, Banka); vol.
 13, p. 336, 1857 (Batavia); vol. 16, p.
 278, 1858 (East Indies; diagnosis
 in key); p. 407 (Japara, Java); vol.
 17, p. 143, 1858-59 (Boleling, Bali);
 Act. Soc. Sci. Ind. Néerl., vol. 5,
 no. 6, p. 3, 1858-59 (Palembang); Nat.

19359. Mahinog, Camiguin Island,
between Leyte and Mindanao. August
3, 1909. Length 55 to 58 mm. 2 examples.

5517, 5525, 5526, 5531, 5532, Malabon
market. August 8, 1908. Length 53 to
68 mm.

1 example. Malaga River, Leyte Island.
July 30, 1909. Length 73 mm.

5558. Malutao and Canina River,
Palawan. April 4, 1909. Length 33 mm.

1 example. Mati, Pujada Bay, Mindanao.
May 15, 1908. Length 53 mm.

1 example. Murcielago Bay, Mindanao.
August 20, 1909. Length 34 mm.

118 examples. Saboda Bay, Palawan
Island. December 31, 1908. Length 41 to 58 mm.

6 examples. Iato River, Lagonoy Gulf,
east coast Luzon. June 17, 1909. Length 32 to
35 mm.

Tijds. Ned. Indië, vol. 21, p. 138, 1860
 (Muntok, Banka); vol. 22, p. 239, 1860
 (Bali); Verslag. Akad. Wet.
 Amsterdam, vol. 12, p. 32, 1861
 (Singapore); Ned. Tijds. Dierk.,
 vol. 2, p. 34, 1865 (Siam), p. 174
 (reference).

Mugil dobula Günther, Cat. Fish.
 Brit. Mus., vol. 3, p. 420, fig. (head),
 1861 (type locality, Perth Water,
 Western Australia; fresh waters
 Anceitum). — Kner, Reise Novara,
 Fische, p. 224, 1865 (Hong Kong). —
Bleeker, Ned. Tijds. Dierk., vol. 4, p. 143, 1873 (1874) (reference). —
Günther, Journ. Mus. Godeffroy, vol.
 6, pt. 11, p. 214, pl. 120, fig. A (text fig.
 of head), 1877 (Anceitum; Hawaiian
 Islands). — Castelnau, Proc. Linn.
 Soc. New South Wales, vol. 3, p. 387, 1878 (Kororarua River)
 387, 1879 (Port Jackson). — Günther,

6 examples. Basut River, Camiao Pass, Luzon. June 15, 1909. Length 25 to 51 mm.

19 examples. Batangas River, Luzon. June 7, 1908. Length 20 to 35 mm.

2 examples. Butuanan Island, east coast Luzon. June 12, 1909. Length 35 to 38 mm.

7 examples. Cuiholo River, Palawan Island. December 29, 1908. Length 28 to 32 mm.

11 examples. Capinuyjungan, Generale Island, east coast Mindanao Island. May 9, 1908. Length 38 to 55 mm.

22 examples. Catbalogan, Samar. April 16, 1908. Length 15 to 25 mm.

46 examples. Cebu dock, Cebu. September 5, 1909. Length 35 to 60 mm.

4 examples. Estero, Sallayan Bay, Pandan Island, Mindoro Strait. December 13, 1908. Length 40 to 42 mm.

Rep. Voy. Challenger, vol. 1, pt. 6, p. 61,
1880 (Hilo; Hawaii). — Macleay,
Proc. Linn. Soc. New South Wales,
vol. 4, p. 414, 1880 (rivers of East Coast;
Hawkesbury River). — vol. 5, pt. 2, p. 47,
— Ogilby, Edible Fish. New South Wales, p. 118, pl. 31, 1893,
1881 (reference). — Waite, Prelim. Rep.

Pap. Proc. Roy. Soc. Tasmania, 1896 (1897), p.
74 (Tasmania).

Wien, math.-naturw. Kl., vol. 70, p. 1;
501, 1901 (Honolulu). — Waite, Rec.
Austral. Mus., vol. 5, pt. 3, p. 197,
March 11, 1904 (reference). — Chew,
Biol. Bull. St. John's Univ., no. 1, p.
104, January 1931 (reference).

? Mugil camptosiensis Castelnau,
Mém. Pers. Afrique australe, p. 48,
1861 (type locality, Gumpston River near
Delagoa Bay). — Gilchrist, Cat. Fish.
South Africa, vol. 1, p. 137, 1912 (reference).

Rep. Voy. Challenger, vol. 1, pt. 6, p. 61,
 1880 (Hilo; Hawaii). — Macleay,
 Proc. Linn. Soc. New South Wales,
 vol. 4, p. 414, 1880 (rivers of East Coast;
 Hawkesbury River). — Ogilby, Edible Fish. New South Wales, p. 118, pl. 31, 1893,
 1881 (reference). — Waite, Prelim. Rep.
Thetis, p. 60, 1898 (Lord Howe Island).
 — Steindachner, Denks. Akad. Wiss.
 Wien, math.-naturw. Kl., vol. 70, p. 501,
 1901 (Honolulu). — Waite, Rec.
 Austral. Mus., vol. 5, pt. 3, p. 197,
 March 11, 1904 (reference). — Chew,
 Biol. Bull. St. John's Univ., no. 1, p.
 107, January 1931 (reference).

? Mugil camptosiensis Castelnau,
 Mém. Voy. Afrique Australe, p. 48,
 1861 (type locality, Gamptos River near
 Delagoa Bay). — Gilchrist, Cat. Fish.
 South Africa, vol. 1, p. 137, 1902 (reference).

~~December 15, 1901. Length 563 mm~~

1881, Cape

Thetis,

— stained

Asian, Hun

forked, slender lobes sharply pointed; least depth of caudal peduncle $2\frac{1}{2}$ to $2\frac{2}{3}$; pectoral $1\frac{1}{4}$ to $1\frac{1}{2}$; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Pale brown generally, scales on back and upper surfaces dusted with dark brown dots marginally. Sides and lower surfaces with bright silvery white reflections. Medium diffuse silvery white band from eye to caudal. Fins all pale or immaculate, except membrane between second and third dorsal spines which dusted with dusky behind second spine, but not black. Iris silvery white.

East Indies, Philippines. Very closely related to Ambassis interrupta, though distinguished by the pale second membrane of the spinous dorsal.

Mugil cunnesius (not Valenciennes)
Day, Fishes of Malabar, p. 136, 1865.

Mugil waigiensis (not Duoy and Garnard)
Castelnau, Proc. Zool. Acclimat. Soc.
Victoria, vol. 1, 1872, p. 140.

~~Myxus caecutiens Günther~~

Myxus caecutiens Günther, Ann.
Mag. Nat. Hist., ser. 4, vol. 17, p.
397, 1876 (type locality, Fresh
water in Rodriguez). — Sauvage,
Hist. Nat. Madagascar, Poiss.,
p. 522, 1891 (reference).

Myxil caecutiens

Myxil coecutiens Sauvage, Hist. Nat.
Madagascar, Poiss., pl. 42, figs. 2-2a,
1891 (type).

Myxus coecutiens Sauvage, Hist. Nat.
Madagascar, Poiss., p. 404, 1891
(reference). (type).

Sparus robinsoni Fowler, Proc. Acad.
Nat. Sci. Philadelphia, 1925, p. 236
(Delagoa Bay; ^{not} Natal).

Inuigil grandis Castelnaux, Proc. Linn.
Soc. New South Wales, vol. 3, p. (353)
386, 1879 (type locality, Port Jackson).
— Macleay, Proc. Linn. Soc. New
South Wales, vol. 4, p. 412, 1880 (East
coast Australia); vol. 5, pt. 2, p.
47, 1881 (reference); vol. 6, p. 47,
1882 (Brisbane to Gipps Land
Lakes).

~~Mugil hypseloxoma~~ ~~Gilby~~

2312

Mugil hypseloxoma Gilby, Proc.
Linn. Soc. New South Wales, vol. 22,
p. 74, ^{September 17,} 1897 (type locality, ~~New South~~
~~Wales~~ Port Jackson and Botany
Bay, New South Wales).

Oules mato Lesson, Voyage Cognille, Zool.,
vol. 2, pt. 1, June 18, 1830, p. 223. Matawai
River, Venus Point, Tahiti. — Humbert
and Jacquinet, Voyage Astrolabe et Jelée,
Zool., vol. 3, 1853, p. 43, pl. 3, fig. 4 (type).
— Fowler, Proc. Acad. Nat. Sci. Phila., 1906,
p. 512 (^{part}). ~~Hawaiian Islands; Tahiti;~~
Oules malo Valenciennes, Hist. Nat. Poiss.,
vol. 7, 1831, p. 479 (type). — Günther, Cat.
Fishes Brit. Mus., vol. 1, 1859, p. 270 (copied).
— Gilchrist, Marine Invest. South Afr., vol. 1, 1902,
p. 705 (compiled).

Kuhlia malo Boulenger, Cat. Fishes Brit.
Mus., vol. 1, 1895, p. 40 (South Africa; Viti
Levu; Tahiti). — Jordan and Evermann,
Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903
(1905), p. 207 (^{part}). ~~Hindia; Kona; Kona; Kona;~~
~~Waialua; Hilo; Kailua~~ — Seale and

[illegible]

Mugil albula (not Linnaeus) Thylander,
Bull. U. S. Fish Comm., vol. 22, p. 525,
1902 (1904) (Wainae, Haleiwa,
Hanalei Rivers, Kauai, Honolulu,
Molokai).

Depth $2 \frac{2}{5}$ to $2 \frac{3}{5}$; head $2 \frac{2}{5}$ to $2 \frac{3}{5}$, width $2 \frac{2}{5}$ to $2 \frac{1}{2}$. Snout $4 \frac{3}{4}$ to 5 in head from snout tip; eye $2 \frac{7}{8}$ to $3 \frac{1}{8}$, greater than snout or interorbital; maxillary reaches slightly beyond front eye edge but not to pupil, expansion 4 in eye, length $2 \frac{1}{2}$ to $2 \frac{2}{3}$ in head from snout tip; teeth villiform, minute, in narrow bands in jaws, on vomer and palatines and narrow band on tongue medially; interorbital $3 \frac{4}{5}$ to 4, slightly convex; angle postero-supraorbital spine, none below; preorbital edge with 6 spines, ridge with smaller serrae; lower ridge and edge of preopercle denticulate, upper ridge and edge entire, spine at angle of ridge little enlarged. Gill rakers $8 + 22$.

2314

Depth $3\frac{1}{2}$ to $4\frac{2}{3}$; head 3 to 4,
width $1\frac{1}{2}$ to $1\frac{3}{5}$. Snout $3\frac{3}{4}$ to $4\frac{1}{8}$
in head; eye $3\frac{1}{5}$ to $4\frac{4}{5}$, subequal
with snout, larger in young,
 $1\frac{2}{5}$ to $1\frac{3}{4}$ in interorbital, adipose
lid absent in young, greatly
developed with age; mouth wide,
would form obtuse angle, jaws
about angle; maxillary $3\frac{1}{8}$ to $4\frac{1}{8}$
in head; interorbital 2 to $2\frac{2}{3}$,
broadly convex; preorbital edge
denticulate in young, serrae
minute with age. Gill rakers
21 to 40 + 45 to 83, slender, $2\frac{1}{2}$ to
 $2\frac{3}{5}$ in eye, fewer in young.

Scales 36 to 40 in median
lateral series to caudal base;
13 or 14 transversely, 17 to 28
predorsal. Soft dorsal and anal
mostly naked, only very few

minute scales basally; caudal covered densely with small scales; paired fins largely with small scales. Scales with 4 parallel close set basal striae; circuli very fine.

D. IV - I, 8, first spine $1\frac{4}{8}$ to 2 in head, first branched ray $1\frac{2}{3}$ to 2; A. III, 8, young II, 9, second spine $2\frac{1}{2}$ to $2\frac{4}{5}$, first branched ray $1\frac{2}{3}$ to $1\frac{5}{6}$; caudal little longer than head, broadly emarginate behind; pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$ in head; ventral $1\frac{1}{2}$ to $1\frac{3}{4}$.

Dark olive or bluish dusky on back, sides and below silvery white. Each row of scales on sides above with darker longitudinal streak. Iris whitish. Dorsal and caudal grayish, other fins whitish. Ventral yellowish.

Circumtropical. In very young the pectoral axillary scale is absent and in rather large examples is quite large.

Besides the material listed below I have also examined a series of American and Mediterranean specimens.

at caudal base median lateral band broken to off set black spot at middle of caudal base, which little less than pupil. Iris whitish or silvered except as crossed by median dark lateral band. Fins all more or less pale or light brownish to whitish; front edge of spinous dorsal dark brown or dusky; upper and lower caudal edges narrowly bordered with dusky, variably rather pale. Very small examples without lowest dark lateral band and ventral median dark band not complete on chest; caudal spot also larger; lower teeth better developed than adult, or with more canines.

Red Sea, Zanzibar, Mozambique, Seychelles, India, Andamans, East Indies, Philippines, Japan, Queensland, Melanesia, Polynesia.

2317

Mugil occidentalis Castelnau

Mugil occidentalis Castelnau, Proc.
Zool. Acclimat. Soc. Victoria, vol.
2, p. 135, ^{Aug 10,} 1873 (type locality,
Fremantle, Western Australia ..
— Macleay, Proc. Linn. Soc. New
South Wales, vol. 4, p. 418, 1880
(copied); vol. 5, pt. 2, p. 47, 1881
(reference). — McCulloch, Mem.
Austral. Mus., vol. 5, pt. 1, p. 114,
June 29, 1929 (reference).

also muzzle and front of interorbital. Scales with 9 or 10 basal radiating striae; 75 to 118 apical denticles, with 6 or 7 transverse series; circuli fine.

D. VII, I, 12, I, third spine $1\frac{7}{8}$ to $2\frac{1}{3}$ in total head length, seventh ray $1\frac{7}{8}$ to 2; A. III, 8, I, third spine $3\frac{1}{2}$ to 4, fourth ray $1\frac{7}{8}$ to $2\frac{1}{10}$; caudal $1\frac{1}{5}$ to $1\frac{1}{3}$, convex behind; least depth of caudal peduncle $2\frac{1}{3}$ to $2\frac{1}{2}$; pectoral 2 to $2\frac{1}{8}$; ventral $1\frac{2}{3}$ to $1\frac{4}{5}$.

Back brown, below pale or at least under surface usually little lighter in small examples. Fins all uniform brownish. Lateral line little darker than general color.

Iris brown. Young with dark horizontal streak along lower edge of infraorbitals and back along

Depth 4; head $4\frac{1}{2}$, width $1\frac{1}{2}$.

Snout 4 in head, longer than eye;
eyes with adipose lids, ^{maxillary exposed;} interorbital
little over 2 in head; teeth above
and below very numerous, rather
large;

Scales 40 in lateral series
to caudal base; 15 transversely,
20 predorsal forward opposite
eye center. Each scale with short
beel. Soft dorsal and caudal scaly.
Pectoral with large axillary
scale.

D. IV — I, 8, first spine equals
interorbital, opposite eleventh
lateral scale, second dorsal origin
opposite 23rd lateral scale;
A. III, 8, opposite second dorsal;
caudal strongly forked; pectoral
 $1\frac{1}{2}$ in head, reach tenth lateral
scale; ventral origin midway between
pectoral base and first dorsal origin.

Silvery, upper parts obscure
gray. Longitudinal lines well
marked in preserved examples.
Large golden blotch behind eye.
Length 356 mm. (Castelnau.)
Western Australia.

Mugil perussii Valenciennes 2320

Mugil perussii Valenciennes, Hist.

Nat. Poiss., vol. 11, p. 116, 1836

(type locality, Vancolo). — (copied);
^{Cat. Fish. Brit. Mus., vol. 3, p. 422, 18} Günther, Journ. Mus. Godeffroy,
vol. 5, pt. 1, p. 215, 1876 (copied).

— Jordan and Seale, Bull. Bur.
Fisher., vol. 25, p. 217, 1905 (1906)
(reference). — Fowler, Mem. Bishop
Mus., vol. 10, p. 128, 1928 (compiled).

— Whitley, Journ. Pan. Pac. Res. Inst.,
vol. 3, No. 1, p. 12, January-March 1928
(Santa Cruz Islands). — Fowler, Mem.
Bishop Mus., vol. 11, p. 324, 1931
(reference).

Mugil perussi Hector, Handbook
New Zealand, p. 16, 1879.

9709. Una Una Road, Binang Unang,
Gulf of Tomini, Celebes. November 17,
1909. Length 148 mm. (Type, Cat.
no. , U. S. N. M.) [2047]

13627. Birabirakan Island, off
Borneo. December 31, 1909. Length
148 mm. (Paratype.)

(For Paul Chabonand, of the
Muséum national d'histoire naturelle
Paris.)

2321

Depth $4\frac{1}{2}$ in total, body broad and robust. Eyes with broad adipose lids; upper lip thick, without teeth or cilia, appears obliquely truncated below snout; forehead convex.

Scales very large, each with small keel. Soft dorsal and anal scaly. Axillary pectoral scale long, pointed.

D. IV - I, 8; A. III, 8, caudal emarginate; pectoral shorter than head.

Uniform silvery, with golden reflections, but without longitudinal brown lines. Pectoral blackish. Length 161 mm.

(Valenciennes.)

Melanesia. Only known from the original account and Whitley's record.

2322

Muyil ophuysseni Bleeker.

Muyil ophuysseni Bleeker, Nat.
 Tijds. Ned. Indië, vol. 16, p. 271,
 1858 (type locality, East Indies;
 diagnosis in key); Act. Soc. Sci.
 Ind. Néerl., vol. 8 (Sumatra), p.
 82, 1859 (Benculen). — Günther,
 Cat. Fish. Brit. Mus., vol. 3, p. 434,
 1861 (copied). — Kner, Reise Novara,
 Fische, p. 226, pl. 9, fig. 2, 1865
 (Java). — Fowler, Journ. Bombay Nat. Hist.
 Soc., vol. 33, no. 1, p. 107, September 30, 1928
 (Bengal).

Muyil ophuysseni Bleeker, Act.
 Soc. Sci. Ind. Néerl., vol. 8 (Sumatra),
 → p. 12, 1859 (Benculen).

↑ — Weber and Beaufort, Fish. Indo Austral. Archip.,
 vol. 4, p. 240, 1922 (~~East Indies~~).
 (Bengkulu; Salibabu material).
 (Macassar).

2322

Mugil phuysseni Bleeker.

Mugil phuysseni Bleeker, Nat.
 Tijds. Ned. Indië, vol. 16, p. 271,
 1858 (type locality, East Indies;
 diagnosis in key); Act. Soc. Sci.
 Ind. Néerl., vol. 8 (Sumatra), p.
 82, 1859 (Benculen). — Günther,
 Cat. Fish. Brit. Mus., vol. 3, p. 434,
 1861 (copied). — Kner, Reise Novara,
 Fische, p. 226, pl. 9, fig. 2, 1865
 (Java). — Fowler, Journ. Bombay Nat. Hist.
 Soc., vol. 3, no. 1, p. 107, September 30, 1928
 (Bombay).

Mugil phuysseni Bleeker, Act.
 Soc. Sci. Ind. Néerl., vol. 8 (Sumatra),
 p. 12, 1859 (Benculen).

Mugil phuysseni Weber, Siboga Exp.,
 vol. 57, Fische, p. 140, 1913
 (Salibabu).

(mgagga)

1851

1851

1851

Batav. Genootsch. (Perc.), vol. 22, 18

p. 29. Batavia, Java.

Paramia octolineata Bleeker, Atlas

Sitzungsber. Akad. Wiss. Wien, vol. 80,
pt. 1, 1879, p. 343 (Enzeavour River,
Queensland). — Macleay, Proc. Linn. Soc.
New South Wales, vol. 5, 1880, p. 307
(North Australia). — Day, Fauna Brit.
India, vol. 1, 1887, p. 447 (Madras). —
Kent, Great Barrier Reef, 1893, pp. 284, 369
(Queensland). — Weber, Zool. Forschungen,
 Austral. Semon, vol. 5, 1895, p. 262
(Thursday Island, Queensland). —
Elera, Cat. Fauna Filip., vol. 1, 1895, p. 457
(Luzon, Calapan, Marinduque, Samar). —
Jordan and Evermann, Proc. U. S. Nat. Mus.,
vol. 25, 1903, p. 340 (Formosa). —
Pellegrin, Bull. Soc. Zool. France, vol. 30,
1905, p. 83 (Baie d'Along, Tonkin). —
Evermann and Seale, Bull. Bur. Fisher.,
vol. 26, 1906 (1907), p. 78 (Bulan). —
Seale, Philippine Journ. Sci., vol. 5, no. 4,
1910, p. 275 (Sandakan, Borneo). —

2323

Depth $3\frac{4}{5}$ to 4; head $3\frac{4}{5}$ to 4, width $1\frac{1}{2}$ to $1\frac{3}{5}$. Snout $3\frac{7}{8}$ to 4 in head; eye $3\frac{4}{5}$ to 4, equals snout, $1\frac{7}{8}$ to 2 in interorbital, broad adipose lids cover iris $\frac{1}{3}$ in front and behind; mouth width 3 in head, as seen below would form obtuse angle; upper lips rather broad, width $3\frac{1}{5}$ in eye; maxillary slightly visible when mouth closes; interorbital 2 to $2\frac{1}{5}$ in head, broadly convex; lower preorbital edge minutely serrated. Gill rakers $31 + 43$, finely lanceolate, $1\frac{3}{5}$ in gill filaments or $1\frac{3}{4}$ in eye.

Scales 32 to 34 in axial lateral series to caudal base; 12 transversely, 17 or 18 predorsal. Axillary pectoral scale $2\frac{4}{5}$ in fin. Soft vertical fins densely covered with minute

2324

scales. Scales with 6 basal radiating striae; apical borders finely fringed; circuli minute.

D. IV - I, 7, ±, first spine $1\frac{4}{5}$ in head, first branched ray $1\frac{4}{5}$, soft dorsal origin over first third of anal base; A. III, 8, ±, first branched ray $1\frac{3}{5}$ to $1\frac{2}{3}$; least depth of caudal peduncle 2; caudal $3\frac{2}{5}$ to $3\frac{1}{2}$ in rest of fish; large, emarginate behind; pectoral $3\frac{4}{5}$ to $4\frac{1}{8}$, reaches slightly beyond first dorsal origin; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$ in head.

Back olive brown, sides and below whitish. Iris gray. Fins pale brown, edges of dorsal and caudal dusky, others paler. Pectoral with small neutral dusky spot at origin.

Though until recently only known from the East Indies the two Bombay examples seem to differ from Weber and Beaufort's description only in a few less lateral scales, possibly due to their rather small size.

2326
A. N. S. P., two examples.
Bombay. Prof. F. Hallberg.
Length 158 to 160 mm.

Genus Synagrops Günther.

Synagrops Günther, Rep. Voy. Challenger, vol. 22, 1887, p. 16. Type Melanostoma japonicum Steindachner and Döderlein, monotypic.

Melanostoma (non Schiner 1860, Stål 1872) (Döderlein) Steindachner and Döderlein, ^{denkschr.} Abad. Wiss. Wien, vol. 48, 1884, p. 5. Type Melanostoma japonicum Steindachner and Döderlein, monotypic.

Parascambrops Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, 1889, p. 296. Type Parascambrops peltatus Alcock, monotypic.

→ Maccullochiana (Jordan) Jordan and Jordan, Mem. Carnegie Mus., vol. 10, no. 1, 1922, p. 44. Type Synagrops serratospinosa Smith and Radcliffe, orthotypic.

{ Hypoclydonia Goode and Bean, Ocean. Ichth., 1895, p. 236. Type Hypoclydonia bella Goode and Bean, monotypic.

One example. Basud River in
fresh water, Luzon. January 15,
1909. Length 104 mm. Adipose cycles
rather narrow. Scales 37. Pectoral
 $1\frac{1}{10}$ in head, axillary scale $2\frac{1}{5}$ in
fin. A. III, 9, V.

23487. Kayoa Island. November 29, 1909.
Length 95 mm.

9773 and 23468. Maitara Island.
November 26, 1909. Length 100 to 107 mm.

23153 to 23156, 23348. Makyan Island.
November 29, 1909. Length 105 to 112 mm.
(23156 male with buccal area.)

24012. Tara Island. December 15, 1909.
Length 95 mm.

Mugil tongae Günther ²³²⁸

Mugil tongae Günther, Rep. Voy.
Challenger, vol. 1, pt. 6, p. 58,
1880 (type locality, Tongatabu);
Journ. Mus. Godeffroy, vol. 7,
pt. 15, p. 217, 1881 (type). —
Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 217, 1905
(reference). — Fowler, Mem.
Bishop Mus., vol. 10, p. 126, 1928
(compiled).

Genus Centrogenys Richardson.

Centrogenys Richardson, Ann. Mag. Nat. Hist. London, vol. 9, 1842, p. 120. Type Centropristis scorpinoidea Cuvier, monotypic.

Myriodon Barneville, Rev. Zool. Soc. Cuv., 1847, p. 133. Type Scorpaena vaigiensis Quoy and Gaimard, monotypic.

Gennadius Jordan and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 37.

Type Sebastes stoliczkae Day, monotypic.

Rhabdosebastes Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, 1922, p. 60.

Type Sebastes stoliczkae Day, orthotypic.

Body compressed. Mouth large and protractile. Maxillary exposed, with supplemental bone. Jaws with bands of villiform teeth; vomer and palatines with teeth; tongue smooth. Front nostril with fringed tentacle.

2329

Depth 4; head $3\frac{1}{2}$. Snout very broad; eye with broad adipose lids; maxillary narrowly exposed; lips thin; mouth cleft nearly 2 in width; mouth angle as seen below slightly more than right one; interorbital little over $2\frac{1}{2}$ in head.

Scales 45 in lateral series; 16 transversely, 26 predorsal forward to snout.

D. IV - I, 8, origin of spinous fin midway between snout tip and caudal base, origin over thirteenth lateral scale, soft dorsal origin over 27th lateral scale; A. III, 8; pectoral fin reaches eleventh lateral scale.

Coloration uniform. Length 165 mm. (Günther.)

Polynesia.

Mugil dussumieri Valenciennes

Mugil dussumieri Valenciennes, Hist.
Nat. Poiss., vol. 11, p. 147, 1836 (type
locality, Bombay; Commandeur). —
Bleeker, Journ. Ind. Archip., vol. 2,
p. (633) 637, 1848 (Bima, Sumbawa);
Verh. Batavia. Genoot. (Museum),
vol. 22, p. 5, 1849 (Bangcallang);
(Nul. Ich. Bengal), vol. 25, p. 48,
1853 (reference); Nat. Tijds. Ned.
Indië, vol. 13, p. 339, 1857 (Batavia;
Bima, Sumbawa). — Day, Fishes of
India, pt. 2, p. 352, pl. 74, fig. 4,
1876; Fauna British India, Fishes,
vol. 2, p. 347, 1887. — Stead, (Proc.)
Linn. Soc. New South Wales, vol. 31,
p. 60, 1906 (); Add.
Fauna New South Wales, p. ⁷42, 190⁷;
Edible Fishes of New South Wales,
p. 42, 1908. — Weber, Nova Guinea,

— Jordan and Richardson, Bull. Bur.
Fisher., vol. 27, 1907 (1908), p. 255 (Aparri).

— Beaufort, Bijdr. Dierk. Amsterdam,
1913, p. 113 (Mirdika River, Batu Merah
River, Ambona; Kauli, Buru).

~~Ambassis vachelli (non Richardson) Peters,
Monatsb. Naturwiss. Berlin, 1868, p. 255
(Chelodermis, Singapore).~~

vol. 5, pt. 2, p. 243, 1908 (Tawarin
River and Meruak River mouth,
North New Guinea; vol. 9, pt. 4, p. 569,
1913 (Hermowai River mouth). —
McCulloch, Rec. Austral. Mus.,
vol. 13, no. 4, p. 126, fig. 1, April 12,
1921 (type of Mugil stevensi; Madras).

↑ — Weber and Beaufort, Fishes Indo Austral.
Archip., vol. 4, p. 235, 1922 (Singapore; Bayan api api,
Deli; Stagen, Balikpapan, Kota Bharu, Java Sea, Batavia,
Amurang; Kambola; Flores; Butan; Celebes; Oamner; New Guinea).
141, July 1, 1925 (reference). —

Fowler, Bull. Bishop Mus., no. 22,
p. 7, 1925 (Guam); Mem. Bishop

Mus., vol. 10, p. 122, 1928 (New

~~Guinea~~ ~~Handbook~~ ~~Traubia~~

— McCulloch, Mem. Austral. Mus., vol. 5,
pt. 1, p. 115, June 29, 1929 (reference).

{ Proc. Acad. Nat. Sci. Philadelphia, vol.
79, p. 263, 1927 (Orani; type of Mugil
lepidopterus); Journ. Bombay Nat. Hist. Soc.,
vol. 3, no. 1, p. 57, September 30, 1928 (Bombay);

vol. 5, pt. 2, p. 243, 1908 (Tawurin River and Meruak River mouth, North New Guinea; vol. 9, pt. 4, p. 569, 1913 (Vernonai River mouth). —

McCulloch, Rec. Austral. Mus., vol. 13, no. 4, p. 126, fig. 1, April 12, 1921 (type of Mugil stevensi; Madras).

→ — McCulloch and Whitley, Mem. Queensland Mus., vol. 8, pt. 2, p. 141, July 7, 1925 (reference). —

Fowler, Bull. Bishop Mus., no. 22, p. 7, 1925 (Guam); Mem. Bishop

Mus., vol. 10, p. 122, 1928 (New Guinea). — Hardenberg, Treubia, vol. 13, livr. 1, p. 124, July 1931 (Roban River mouth, Sumatra).

{ Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 263, 1927 (Orani; type of Mugil lepidopterus); Journ. Bombay Nat. Hist. Soc., vol. 33, no. 1, p. 57, September 30, 1928 (Bombay);

round
5 row

Pearson, Ceylon Administrat. Rep., 1922, p. 16.[↑]

h. Upper outer row of teeth round
obtusely molars, of which 4 or 5 rows

4 Pr. Head.

820

depth of caudal peduncle $2\frac{3}{5}$ to $2\frac{2}{3}$;
pectoral $1\frac{1}{4}$ to $1\frac{1}{3}$; ventral $1\frac{2}{5}$ to $1\frac{2}{3}$.

Pale brown, scales on back all dusted broadly marginally with dusky. Median axial silvery white band from head to caudal base. Iris silvery white. Fins pale, rays of soft verticals more or less dusted with dull dusky terminally and membrane between second and third dorsal spines terminally dusky to blackish. Often preserved examples show each caudal lobe slightly darker medially.

East Indies, Philippines, Polynesia. We have united Amboensis vaivasaensis Jordan and Seale with this species. Bleeker given the predorsal scales as 17, a number usually a little greater than most of our specimens. Bleeker

Mugil albula (not Linnaeus)
Buehnan - Hamilton, Fishes of Ganges,
 p. 147, 1822.

~~Mugil subviridis (not Balengerius?)
Günther, Cat. Fish. Brit. Mus., vol. 3,
 p. 423, fig. (head), 1861 (Madras).~~

Mugil ventriosus Richardson, Ichth.
China Japan, p. 249, 1846 (type
 locality, Chinese Sea; Canton [on
 figure]). — Günther, Cat. Fish.
Brit. Mus., vol. 3, p. 410, 1861
 (reference). — Bleeker, Ned. Tijds.
Dierk., vol. 4, p. 143, 1873 (1874).
 (reference). — Macleay, Proc. Linn.
Soc. New South Wales, vol. 5, pt. 2, p.
 48, 1881 (reference). — Chu, Biol.
Bull. St. John's Univ., no. 1, p. 105,
 January 1931 (reference).

had, however, but 2 specimens 73 to 79
mm. long.

~~Mugil parmatius Cantor~~

2333

Mugil parmatius Cantor, Journ.
Asiatic Soc. Bengal, vol. 18, pt. 2,
p. 1076, 1847 (1853) type locality,
Sea of Pinang).
— Bleeker, Nat. Tijds. Ned. Indië,
vol. 16, p. 275, 1858 (~~Indische~~
diagnosis in key). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p.
410, 1861 (reference). — Duncker,
Mitteil. naturh. Mus. Hamburg,
vol. 21, p. 166, 1903 (1904) (reference).

strong spine at angle and lower edge entire. Opercle ends in spine. Gill membranes separate. Pseudobranchiae very small or absent. Gill rakers long. Branchiostegals 7. Vertebrae 25, of which 14 caudal. Scales moderate, denticulated. Head scaly. Dorsals and anals move in scaly sheath, soft fins covered with scales. Lateral line complete, extends nearly to end of caudal fin; tubes straight and confined to basal half of exposed part of scale. Dorsal with 7 spines, soft fin with spine and 12 to 15 rays, spinous fin shorter than soft fin. Anal with 3 spines and 9 to 13 rays. Caudal rounded. Pectoral rays 16, subsymmetrical, rounded. Ventral with strong spine and scaly pointed flap at base, below pectoral base,

Langil subviridis (not Valenciennes)
Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 423, fig. (head), 1861
(Madras).

565

Depth $2\frac{2}{5}$ to $2\frac{1}{2}$; head $3\frac{1}{8}$ to $3\frac{1}{4}$, width 2 to $2\frac{1}{8}$. Snout $2\frac{1}{4}$ to $2\frac{2}{5}$ in head; eye 3 to 4, $1\frac{2}{5}$ to $1\frac{3}{4}$ in snout, 1 to $1\frac{1}{5}$ in interorbital; maxillary reaches $\frac{4}{5}$ to eye or $\frac{1}{5}$ in eye, expansion $1\frac{4}{5}$ to 2 in eye, length $2\frac{3}{5}$ to $2\frac{3}{4}$ in head; 4 front upper and 6 front lower canines, rather small or moderate molars biserial in each jaw; interorbital $3\frac{1}{4}$ to $3\frac{2}{5}$, well convex; narrowest preorbital width less than or nearly equals eye.

Gill rakers 7+11, short, lanceolate, $\frac{1}{2}$ of gill filaments, which $1\frac{3}{4}$ in eye.

Scales 54 to 56 in lateral line to caudal base and 6 to 8 more on latter;

Mugil javanicus Bleeker, Nat.

Tijds. Ned. Indië, vol. 3, p. 701,
1857 (nomen nudum) (type locality
evidently Batavia).

Genus Argyrops Swainson Cat 30

Argyrops Swainson, Nat. Hist. ^{unala} Am., vol. 2,
1839, p. 221. Type Sparus spinifer Forsskal,
monotypic.

Paragyrops Tunaka, ^{Zoöl. Magazine Tokyo,} ~~Fishes of Japan,~~
vol. 24, no. 330, — 1916, p. 141. ~~In~~
~~vol. 24, no. 24, 1916, p. 425, pt. 117, fig. 343.~~

Type Paragyrops edita Tunaka,
monotypic.

Jaws with front row of teeth conic incisors
and laterally 2 or 3 rows of rounded
teeth immediately follow; 2 rows of teeth
with rounded crowns along sides of each
jaw, most interior small and above
biserial. Pseudobranchiae present.

Branchiostegals 6. Air bladder simple.
Pyloric appendages 5. Scales moderate,
present on cheeks. Dorsal with 11 or 12
spines of which 4 greatly elongated and
filamentous. Anal spines 3.

~~Mugil sundanensis Bleeker~~ ²³³⁶

Mugil sundanensis Bleeker, Nat.
Tijds. Ned. Indië, vol. 4, p. 265,
1853 (type locality, Benculan,
Sumatra; Batavia); vol. 7, p. 313,
1854 (Bantern); vol. 10, p. 347,
1856 (Rio, Bintang); vol. 11, p. 419,
1856 (Muntok, Banka); vol. 12,
p. 293, 1856 (Boleleng, Bali); vol.
16, p. 275, 1858 (East Indies; diagnosis
in key); Act. Soc. Sci. Ind.
Néerl., vol. 3, no. 6, p. 2, 1857-58
(Sinkawang, Borneo). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p.
425, 1861 (copied). — Day, Fishes
of Malabar, p. 381, 1865. —
Bleeker, Verslag. Akad. Wet.
Amsterdam, ser. 2, vol. 2, p. 293,
1868 (Rio, Bintang). — Martens,

Lateolabrax japonicus (Cuvier).

Labrax japonicus Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 85. Japan. — Richardson, Ichth. China Jap., 1846, p. 222 (Hong Kong, Canton, Peiho, Chusan, Japan). — Bleeker, Verh. Batav. Genootsch., no. 7, vol. 26, 1857, p. 23 (Nagasaki). Percalabrax japonicus Schlegel, Fauna Japon., Poiss., pt. 1, 1842, p. 2, pl. 2, fig. 1 (Japan).

Percalabrax japonicus Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 71 (China, Japan). — Kner, Reise Novara, Zool., vol. 1, pt. 5, 1865, p. 13 (Shanghai). — Günther, Ann. Mag. Nat. Hist. London, ser. 4, vol. 12, 1873, p. 240 (Shanghai). — Martens, Preuss. Exp. Ost-Asien, vol. 1, 1876, p. 385 (Yokohama, Nagasaki, Shanghai). — Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 63 (Inosima, Inland Sea). — Steindachner and Döderlein, Denkschr. Akad. Wiss. Wien, vol. 47, pt. 1, 1883, p. 228, pl. 4, fig. 3 (Tokyo). — Elera, Cat. Fauna Filip., vol. 1, 1895, p. 458

2337

Preuss. Exped. Ost Asien, vol. 1,
p. 395, 1876 (Singapore). ✓ —

— Macleay, Proc. Linn. Soc. New South Wales,
vol. 7, p. 362, 1882 (New Guinea).

Banka, Sumatra, Java, Bali,
Timor). — Elera, Cat. Fauna
Filipinas, vol. 1, p. 537, 1895
(Luzon, Pasig, Laguna de Bay).

— Jordan and Seale, Bull. Bur.
Fisher., vol. 25, p. 217, 1905 (1906)
(reference); vol. 26, p. 11, 1906 (1907)
(Cavite). — Evermann and Seale,

Bull. Bur. Fisher., vol. 26, p.
59, 1906 (1907) (Bacon); Proc.

U. S. Nat. Mus., vol. 31, p.
1906 (Manila). — Weber, Siboga

Exped., vol. 57, Fische, p. 138, 1913
(Macassar, Sumatra Island).

Preuss. Exped. Ost Asien, vol. 1,
 p. 395, 1876 (Singapore). ✓ —
Weber, Zool. Ergebn. Ned. Ost
 Ind., vol. 3, p. 451, 1894 (Borneo,
 Banka, Sumatra, Java, Bali,
 Timor). — Elera, Cat. Fauna
 Filipinas, vol. 1, p. 537, 1895
 (Luzon, Pasig, Laguna de Bay).
 — Jordan and Seale, Bull. Bur.
 Fisher., vol. 25, p. 217, 1905 (1906)
 (reference); vol. 26, p. 11, 1906 (1907)
 (Cavite). — Evermann and Seale,
 Bull. Bur. Fisher., vol. 26, p.
 59, 1906 (1907) (Buenos Aires).
 U. S. Nat. Mus., vol. 31, p. ,
 1906 (Manila). — Weber, Siboga
 Exped., vol. 57, Fische, p. 138, 1913
 (Macassar, Hammer Island).

[↑]
Bamber, Journ. Linn. Soc. London, Zool., vol.
1915, p. 480 (Thudanese Red Sea).

p. 315,
Weber,
Ind., v.
Banksa

(Luzon, Butuan, Orion). — Ishikawa
and Matsuura, Prelim. Cat. Fishes
Mus. Tokyo, 1897, p. 57 (Hokkaido). —
Fowler, Proc. Acad. Nat. Sci. Phila., 1907,
p. 249 (Iwajima, Japan).

~~Lateolabrax japonicus~~ Bleeker, Verh. Batav.
Genootsch. (Japan), vol. 76, 1857, p. 53 (Nagasaki).

Lateolabrax japonicus Boulenger, Cat. Fishes
Brit. Mus., vol. 1, 1895, p. 123 (Chefoo,
Shanghai, Hae-yoo, China, Amoy,
Chusan, Formosa). — Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, 1901, p. 353
(Tokyo); Annot. Zool. Japon., vol. 3, 1901,
p. 72 (Yokohama, Nagasaki, Shimoda).
— Jordan and Seale, Proc. U. S. Nat. Mus.,
vol. 29, 1905, p. 521 (Shanghai). — Jordan
and Starks, Proc. U. S. Nat. Mus., vol. 31,
1906, p. 517 (Port Arthur, Manchuria). —
Jordan and Richardson, Mem. Carnegie

Mugil brachysoma Bleeker, Nat.
Tijds. ned. Indië, vol. 9, p. (392)
399, 1855 (type locality, Gumbong
River, Pasuruan, Java); vol. 1
18, p. 388, 1857 (Timor deli);
Act. Soc. Sci. Ind. néerl., vol. 3,
no. 4, p. 4, 1857-58 (Trussan,
Sumatra).

Mus., vol. 4, no. 4, 1909, p. 183 (Keerun);
Proc. U. S. Nat. Mus., vol. 37, 1910, p. 429
(Yokohama, Tokyo, Wakanoura, Kurume,
Chikugo River, Matsushima, Kagoshima,
Nagasaki, Hiroshima, Onomichi,
Furuta, Hakodate, Kobe). — Snyder,
Proc. U. S. Nat. Mus., vol. 42, 1912, p. 413
(Tokyo, Misaki, Kagoshima). — Jordan
and Metz, Mem. Carnegie Mus., vol. 6,
no. 1, 1913, p. 30 (Fusan, Korea). —
Jordan and Thompson, Mem. Carnegie
Mus., vol. 6, no. 4, 1914, p. 248 (Shimonoseki
and Shinabara). — Izuka and
Matsuura, Cat. Zool. Spec. Tokyo Mus.,
1920, p. 154 (Hokkaido). — Jordan and
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,
1925, p. 234 (Sapporo, Tokyo, Kobe,
Kagoshima Bay, Mikawa Bay, Miyazu,
Fukuoka, Lake Kasumigaura).

Mugil valenciennesii Bleeker

Mugil valenciennesii Bleeker,
Nat. Tijds. Ned. Indië, vol. 16,
p. 277, 1858 type locality,
East Indies; diagnosis in key).
— Günther, Cat. Fish. Brit.
Mus., vol. 3, p. 410, 1861 (name).

Centrogenys vaigiensis (Duoy and Gaimard).

Scorpaena vaigiensis Duoy and Gaimard,
Voy. Uranie, Zool., 1824, p. 324, pl. 58,
fig. 1. Vaigie.

Myriodon vaigiensis Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 175 (Port Essington,
Frey cinet's Harbor, Australia). — Kner,
Reise Novara, Zool., vol. 1, pt. 5, 1865, p.
38 (Singapore). — Bleeker, Atlas Ichth.
Ind. Néerl., vol. 7, 1873-76, pl. (49) 297,
fig. 1. — Günther, Rep. Voy. Challenger,
vol. 1, 1880, p. 38 (between New Guinea and
Australia). — Károli, Termesz. Füzetek,
Budapest, vol. 5, 1882, p. 150 (Singapore).
— Meyer, Ann. Soc. Españ. Hist. Nat.
Madrid, vol. 14, 1885, p. 10 (Cebu). —
Day, Fishes of India, Suppl., 1888, p. 747
(correction); Fauna Brit. India, vol. 1,
1889, p. 461, fig. 145. — Elera, Cat. Fauna
Filip., vol. 1, 1895, p. 464 (Cebu).

Mugil nepalensis Günther, Cat. Fish.
 Brit. Mus., vol. 3, p. 424, 1861 (type-
 locality, Nepal. — Ashima, Annot.
 Zool. Japon., vol. 11, no. 1, p. 19, March
 31, 1926 (Haino, Hainan). — Chu,
 Biol. Bull. St. John's Univ., no. 1, p.
 104, January 1931 (reference).

Mugil planiceps (part.) (Günther,
 Cat. Fish. Brit. Mus., vol. 3, p. 424,
 1861.

Füzetek, Budapest, vol. 5, 1881, p. 155
 (Java; Sarangoor). $\frac{1}{m}$ Klunzinger,
 Fische Roth. Meer., 1884, p. 48, pl. 5 fig. 1
 b (premaxillary groove), pl. 13, fig. 3.
 $\frac{1}{m}$ Sauvage, Hist. Nat. Madagascar,
 Poiss., 1891, p. 242 (Red Sea, Seychelles,
 Malabar, Vanicolo, Waigiu, Oualan). $\frac{1}{m}$
Kent, Great Barrier Reef, 1893, p. 369
 (Queensland). $\frac{1}{m}$ Weber, Siboga Exped.,
 vol. 57, 1913, p. 272 (Salibabu Island). $\frac{1}{m}$
Fowler, Mem. Bishop Mus., vol. 10, 1928,

1 example. Lolobolo, Mindanao.

No date. Length 8 mm.

59 examples. Iwawa River, Luzon.

February 25, 1909. Length 58 to 120 mm.

22085. Isabela, Basilan Island.

September 11, 1909. Length 74 mm.

32 examples. Iwahig River and tributary,

Puerta Princesa, eastern Palawan Island.

April 4, 1909. Length 45 to 93 mm.

~~Mugil meyeri Günther~~

Mugil meyeri Günther, Ann. Mag.
Nat. Hist., ser. 4, vol. 9, p. 439,
1872 (type locality, Macassar, Celebes).
— Weber, Zool. Ergebn. Ned. Ost
Ind., vol. 3, p. 451, 1894 (Celebes).
— Elera, Cat. Fauna Filipinas, vol.
1, p. 537, 1895 (Luzon, Laguna de
Bay).

Mugil laevis (Buchanan-Hamilton)
Day, Fishes of India, pt. 2, p. 352,
1875 (name in synonymy) (type
locality, Hooghly at Calcutta).

1411. Jan. Keke Island, Flores Sea.
December 21, 1909. Length 243 mm.

⁴⁷⁸⁸
(D. 5517). $5^{\circ} 36' N.$, $117^{\circ} 27' E.$, China
Sea, vicinity Formosa. Length 240
mm. [Though the record book gives
D. 5317, as we find D. 5517 between
D. 5316 and D. 5318 in Dredging
and Hydrographic Records of the
U. S. Fisheries Steamer Albatross,
Bur. Fisher. Document, No. 741, 1910,
p. 44, we assume D. 5517 to have
been intended.]

2342

Mugil stevensi Ogilby, Ann.

Queensland Mus., no. 9, p. 19, 1908

(type locality, Gold Island,
Rockingham Bay).

Mugil lepidopterus Fowler, Proc.

Acad. Nat. Sci. Philadelphia, vol. ,

p. 9, fig. 4, 1918 (type locality,
Philippines).

Mugil anpinensis Ashima, Ann. Carnegie
Mus., vol. 12, nos. 3-4, p. 245, pl. 11, fig. 1,

April 25, 1922 (type locality, Anpin
near Tainan, Formosa; Kwaren River
at Kada, Kwarenko).

12309.
5635, Maagnas, Lagonoy Gulf, Luzon. 823
June 17, 1909. Length 65 to 98 mm.

9 examples.

¹⁵⁷⁵
9 examples. Mahinog River, Camiguin
Island, between Leyte and Mindanao.
August 3, 1909. Length 50 to 95 mm. ←

64 examples. Malaga River, Leyte.
July 30, 1909. Length 58 to 105 mm.

4 examples. Malinao River, Palawan.
April 2, 1909. Length 57 to 79 mm.

17 examples. Raboda Bay, Palawan.
December 1908. Length 56 to 72 mm.

1 example. Raboda Bay. December 31,
1908. Length 67 mm.

23595. Rato River, Lagonoy Gulf, east
coast Luzon. June 18, 1909. Length 47 to 79
mm. 7 examples.

21790. Ronusan River, Camp Overton,
Mindanao Island. August 6, 1909. Length
40 to 70 mm. 37 examples.

Depth $3\frac{3}{5}$ to 4; head $3\frac{1}{4}$ to 4,
 width $1\frac{2}{5}$ to $1\frac{3}{4}$. Snout $3\frac{1}{5}$ to
 $3\frac{1}{2}$ in head; eye $3\frac{3}{5}$ to 4, broad
 adipose lids cover $\frac{1}{4}$ of iris in
 front and behind; mouth width
 3 to $3\frac{1}{5}$ in head; upper lip
 rather broad, width $\frac{1}{3}$ of eye;
 maxillary exposed, reaches eye;
 interorbital $2\frac{1}{6}$ to $2\frac{1}{2}$ in head,
 nearly level; lower preorbital
 edge finely serrated. Gill rakers
 27 to 30 + 45 to 48, finely
 lanceolate, $1\frac{1}{4}$ in gill filaments.

Scales ^{27 to} 30 in lateral axial
 series to caudal base; 10 or 11
 transversely, 20 to 23 predorsal.
 Axillary pectoral scaly flap
 rudimentary or absent. Soft
 vertical fins finely scaled. Scales

with 6 to 9 basal radiating striae;
 74 to 86 weak apical denticles
 with 8 to 10 transverse series of
 basal elements; circuli fine.

D. IV — I, 8, I, first spine
 $1\frac{2}{5}$ to $1\frac{4}{5}$ in head, first branched
 ray $1\frac{1}{2}$ to $1\frac{7}{8}$, soft dorsal
 origin over middle of anal
 base; A. III, 9, I, third spine $2\frac{1}{2}$,
 first ray $1\frac{3}{5}$ to $1\frac{4}{5}$; caudal 1 to
 $1\frac{1}{10}$, well emarginate behind;
 least depth of caudal peduncle
 2 to $2\frac{1}{3}$; pectoral $1\frac{1}{3}$ to $1\frac{3}{5}$,
 rays I, 12; ventral rays I, 5,
 fin $1\frac{1}{3}$ to $1\frac{1}{2}$ in head.

Back olive brown, below
 whitish. Iris slate gray. Fins
 brownish, lower whitish and
 no dark spot at pectoral origin.

2345

India, Ceylon, Andamans, Singapore,
East Indies, Philippines, China,
Queensland, New South Wales,
Micronesia. Mugil parmatius
Cantor seems to be the present
species, as may be seen from
the following condensed from
the original description:

2346

Depth 4; head 4. Snout 4 in head; orbit 4, subequal with snout, $1\frac{1}{2}$ in interorbital, with adipose eyelids; mouth very small; above and below minute setaceous teeth; preorbital truncate, denticulate below.

Scales 27 in lateral series, 10 transversely. Soft vertical fins half covered with small scales. Pectoral without elongated axillary scale.

D. IV - I, 8, first spine strong, about $1\frac{2}{3}$ in head; A. III, 9; two central caudal rays but slightly shorter than rest; least depth of caudal peduncle 2 in head; pectoral rays 14; ventral I, 5.

Head above and back brownish olive. Cheek and upper half of sides silvery greenish gray. Lower half of sides and abdomen

2347

silvery white. On upper part of
preopercle triangular bluish
black spot, behind which
indistinct amber-colored spot.
Rest of preopercle and opercle
pale silvery blue, faintly
vermiculated with brown. Iris
silvery gray. Dorsal and caudal
membranes pale gray, minutely
dotted with brown. Length
121 mm. (Cantor.)

2348

Four examples. Basud River, Luzon,
in fresh water. January 15, 1907.
Length 153 to 165 mm.

One example. Buena Vista, Guimaras
Island. January 14, 1907. Length 175 mm.

6702. Manila market. August 4, 1908.
Length 242 mm. Depth 4. Scales 28.

6627 to 6631. Hakoda Bay in river,
Palawan. December 31, 1908. Length 181
to 194 mm. Adipose eyelids well developed.
Scales 31, ~~no~~ no axillary pectoral scale.
Pectoral $1\frac{1}{4}$ in head. A. III, 9, I.

Seven examples. Nanjan, Mindoro.
June 5, 1908. Length 32 to 36 mm.
No adipose eyelids. Scales 28. Pectoral
with axillary scale.

20 examples. Sandabane Bay, Borneo.
March 2, 1908. Length 43 to 54 mm.

2349
9248. Nonucan River, Mindanao.

August 6, 1909. Length 280 mm.
Depth $3\frac{1}{2}$. Scales 28.

Nip examples. Tucot River,
Mariveles, Luzon. January 29, 1909.
Length 56 to 118 mm. Adipose, eyelids
well developed, hardly developed
in smallest. No axillary pectoral
scale. Scales 28 to 31.

caudal base. In thin band row of circular silvery spots, 9 from opercle to postanal and then continued as solid line to caudal base. Below yellow band another of silvery and median line of belly yellow. Under side of head and throat white. Entire body and head golden orange. Lips blackish. Iris black and gold. Side of jaws silvery. Purple line of back continued to snout. Dorsal orange, membrane crimson, spinous dorsal with crimson line at base, remainder pale yellow. Anal with crimson basal line, rest pink. Caudal and pectoral hyaline. Ventral crimson.

2350

A. n. S. P., no. 47483. Philippine
Islands. Commercial museum of
Philadelphia. Length 206 mm.
Type of Mugil lepidopterus.

A. n. S. P., two examples. Bombay.
Prof. F. Hallberg: Length 100 to 110
mm.

Body rather elongate, compressed. Eyes large. Jaws with bands of villiform teeth and strong canines in front; small or villiform teeth on vomer and palatines. Preopercle with angle produced, edge and ridge serrate or entire. Gill rakers 10 to 12 on lower branch of first arch. Scales rather large, cycloid, deciduous, about 30 in lateral line to caudal base. Scales on head very small. Dorsal with 9 spines, soft fin with spine and 8 or 9 rays. Anal with 2 spines and 6 or 7 rays. Caudal forked. Vent normal.

Bathypelagic.

2351

Mugil poecilus Day

Mugil poecilus Day, Proc. Zool. Soc.
London, p. 33, 1865 (type locality,
Cochin, India); Fishes of Malabar,
p. 140, pl. 9, 1865; Fishes of India,
pt. 2, p. 351, pl. 75, fig. 4, 1876.

Mugil poecilus Day, Fauna British
India, Fishes, Vol. 2, p. 345, 1889.

Mugil cunnambo Day, Fishes of
Malabar, p. 141, fig. (head), 1865
(type locality, Malabar).

which 13 caudal. Scales small, 100 or more in lateral line. Cheeks and opercles scaled, rest of head, jaws and chin bare. Opercle, preopercle, infraorbitals and suborbital regions more or less rugose. Dorsal spines 8, strong, rays 14 to 16. Anal spines 2 or 3, rays 12 to 14. Caudal rounded. Pectoral rounded. Ventral with strong spine, below pectoral base and fins close together.

East Indies, China, Japan.

Depth $4\frac{1}{5}$; head $4\frac{1}{8}$, width $1\frac{2}{5}$.
 Snout 5 in head; eye 4, greater than snout, $1\frac{1}{2}$ to $1\frac{3}{4}$ in interorbital, with moderately broad adipose lids; maxillary exposed; upper lip thin, forms front part of snout; mouth cleft equals half mouth width; fine teeth above, minute ones below; interorbital low, nearly flat; preorbital angularly bent, serrated.

Scales 30 to 33 in lateral series; 10 or 11 transversely, 20 to 20 predorsal forward to front of snout. Soft vertical fins finely scaled. Pectoral without elongated axillary scale. Scales slightly stenoid.

D. IV — I, 8, first spine $1\frac{3}{4}$ in head, first branched ray $1\frac{1}{2}$;
 A. III, 9, first branched ray $1\frac{3}{4}$;
 least depth of caudal peduncle $1\frac{7}{8}$;

pectoral $1\frac{2}{5}$, rays 15; ventral rays ²³⁵²
I, 5, fin $1\frac{3}{5}$ in head; caudal $3\frac{7}{8}$
in rest of fish, emarginate
behind.

Grayish, shot with purple
and silver, becoming lighter on
sides and below, each scale
usually with deep central black
spot. Fins stained with gray.
Length 610 mm. (Day,)

Western coast of India.

Mugil jerdoni Day

2353

Mugil jerdoni Day, Fishes of India,
pt. 2, p. 352, 1875 (type locality,
India; Fauna British India,
Fishes, vol. 2, p. 346, 1889.

Mugil sundanensis (not Bleeker)
Day, Fishes of Malabar, p. 138,
1865.

p. 525 (Kotosho, Apia, Mindoro). —
Beaufort, Bijdr. Dierk., Amsterdam,
 1913, p. 110 (Kajeli, Bouru; Batjan;
 Buli, Halmahera; Lam-lam, North
 Waigiu; Eme and Tuba Rivers, West
 Ceram). — Regan, Proc. Zool. Soc. London,
 1913, p. 378 (Malay Archipelago and South
 Pacific; types of Uta leuciscus Jenyns).
 — Weber, Siboga Exped., vol. ^{57, Fische} 65, 1913, p.
 194 (Dammer Island). — Fowler, Bishop
 Mus. Bull., no. 22, 1925, p. 32 (Samoa), p.
 37 (Tahiti). — Fowler and Bean, Proc.
 U. S. Nat. Mus., vol. 71, 1927, p. 14 (Tahiti).

Depth 4; head $4\frac{1}{2}$. Snout 7 in head; eye $3\frac{1}{2}$, greatly exceeds snout, $1\frac{1}{2}$ in interorbital, with broad posterior adipose lid; maxillary end exposed; mouth cleft equals half mouth width, which would form somewhat obtuse angle; upper lip moderately thick, forms end of snout; upper teeth distinct; interorbital $2\frac{1}{4}$ in head, slightly convex; preorbital strongly bent, serrated.

Scales 31 or 32 in lateral line, 10 transversely, 18 predorsal forward to snout. Soft vertical fins densely scaled. Pectoral ^{without} elongated axillary scale.

D. IV - I, 8, origin of first fin slightly nearer snout tip than caudal base, stout spines $1\frac{1}{2}$ in body depth or slightly higher

2355

than second dorsal; A. III, 9, front half before soft dorsal origin, third spine $2\frac{1}{5}$ to $2\frac{1}{2}$ in head; caudal rays 15; pectoral rays 16, origin supramedian in body depth, fin long as head without snout; ventral rays I, 5; least depth of caudal peduncle equals postorbital.

Steel blue along back, silvery white on sides and below.

Black spot over eye center.

Cheek tinged yellow. Sometimes diffuse dark blue spot on opercle. Dorsals with ends gray. Caudal and pectoral with dark edges. Pectoral with rather indistinct gray spot in axil. Ventral and anal white. Length 153 mm. (Day.)

India. Said to differ from Mugil engel in the absence of the axillary pectoral scale and stout dorsal spines.

Mugil strongylocephalus Richardson

Mugil strongylocephalus Richardson,
 3rd edth. China Japan, p. 249, 1846
 (type locality, Hong Kong; Sea of
 China). — Günther, Cat. Fish.
 Brit. Mus., vol. 3, p. 425, text fig.
 (head), 1861 (types; China). —
Bleeker, Nederl. Tijds. Dierk.,
 vol. 4, p. 143, 1873 (1874) (reference).
 — Sauvage, Bull. Soc. Philomath.
 Paris, ser. 5, vol. 7, p. 106, 1881
 (Swatow). — Rutter, Proc. Acad.
 Nat. Sci. Philadelphia, 1897, p. 70
 (compiled). — Tirant, Serv.
 Océanogr. Pech. Indo Chine,
 p. 171, 1929 (Hue). — Chu, Biol.
 Bull. St. John's Univ., no. 1, p. 104,
 January 1931 (reference). — Chavez,
 Inst. Océanogr. Indo Chine,

1 example [D. 5393]. Pangmalan Point,
 Talajit Island, S. 59° E., 14.8 miles
 ($12^{\circ}03'30''$ N., $124^{\circ}03'36''$ E.), between
 Samar and Masbate. In 136 fathoms.
 March 13, 1909. Length 80 mm.

4561 to 4563 [D. 5394]. Panalangan
 Point, Talajit Island, S. 68° E., 8.1 miles
 ($12^{\circ}00'30''$ N., $124^{\circ}05'36''$ E.), between
 Samar and Masbate. In 153 fathoms.
 March 13, 1909. Length 82 to 112 mm.

2325 to 2335, 2437 and 2438 [D. 5396].
 Panalangan Point, Talajit Island, S. 78°
 E., 4.5 miles ($11^{\circ}57'$ N., $124^{\circ}12'24''$ E.),
 between Samar and Masbate. In 137
 fathoms. ^{March 15, 1909.} Length 83 to 213 mm.

31 examples [D. 5397]. Panalangan
 Point, Talajit Island, S. 78° E., 6 miles
 ($11^{\circ}57'27''$ N., $124^{\circ}10'42''$ E.), between
 Samar and Masbate. In 134 fathoms.
 March 15, 1909. Length 80 to 125 mm.

19^e note, p. 20, August 25, 1932²³⁵⁷
(Annam).

Mugil stronglylocephalus Reeves,
Journ. Pan Pac. Res. Inst.,
vol. 3, no. 2, p. 8, 1927 (reference)
(error).

942

5 examples [D. 5516]. Point Tagolo.

Light, S. 80° W., 9.7 miles ($8^{\circ}46'N.$, $123^{\circ}32'30''E.$), Mindanao. In 175 fathoms. August 7, 1909. Length 105 to 150 mm.

4262 to 4264 [D. 5517]. Point Tagolo.

Light, S. 83° W., 10.5 miles ($8^{\circ}45'30''N.$, $123^{\circ}33'45''E.$), Mindanao. In 169 fathoms. August 9, 1909. Length 134 to 180 mm.

2215 to 2218 [D. 5519]. Point Tagolo Light, S. 71° W., 8.7 miles ($8^{\circ}47'N.$, $123^{\circ}31'15''E.$), Mindanao. In 182 fathoms. August 9, 1909. Length 142 to 160 mm.

3678 [D. 5441]. San Fernando Point Light, S. 87° E., 18.7 miles ($16^{\circ}38'N.$, $119^{\circ}57'18''E.$), west coast Luzon. In 186 fathoms. May 10, 1909. Length 170 mm.

3440 [D. 5542]. Tagolo Light, S. 70° W., 13.2 miles ($8^{\circ}48'30''N.$, $123^{\circ}35'30''E.$), northern Mindanao. In 200 fathoms. August 20, 1909. Length 152 mm.

Depth $4\frac{2}{3}$; head $5\frac{1}{2}$ ^{width $1\frac{1}{2}$.} Snout $4\frac{9}{10}$
in head; eye 3, greater than
snout, about $1\frac{1}{3}$ in interorbital;
with broad adipose lids;
maxillary narrowly exposed;
^{upper lip moderately thick, oblique below snout end;}
mouth cleft $2\frac{5}{5}$ in mouth
¹ width, which would nearly form
right angle; interorbital $2\frac{1}{2}$ in
head, very convex; preorbital bent,
not notched.

Scales 33 in lateral series;
11 transversely; 18 predorsal
scales forward to snout.
Soft dorsal and anal scaly.
Pectoral with long axillary scale.
D. IV - I, 8, spinous fin origin
opposite tenth or eleventh lateral
scale, soft dorsal origin opposite
21st lateral scale; A. III, 9, front
third before soft dorsal origin;

caudal emarginate; least depth of caudal peduncle rather less than 2 in head; pectoral longer than head snout not included, reaches to or slightly beyond first dorsal origin, inserted somewhat above middle in body depth. (Günther.)

China. Richardson describes the species with bright scales, whole fore part of back forming trunk dark bronze colored.

No spot on pectoral base.

Length 178 mm.

Mugil cunnesius Valenciennes

Mugil cunnesius Valenciennes, Hist.
Nat. Poiss., vol. 11, p. 114, 1836 (type
locality, Moluccas; Malabar;
Bombay). — Bleeker, Verh. Batavia.
Genoot. (Natuur), vol. 22, p. 5, 1849
(Kammal). — Cantor, Journ. Asiatic
Soc. Bengal, vol. 15, pt. 2, p. 1082, 184,
(1850) (part; not material). — Bleeker,
Nat. Tijds. Ned. Indië, vol. 1, p. 160,
1850 (Banka); vol. 3, p. (445) 454,
1852 (Banka; Batavia, Tegal,
Pekalongan, Samarang, Surabaya,
Bezaki, Pesuruan; Kammal), p.
717 (Pankalpinang, Banka); vol.
5, p. 544, 1853 (Mearwen Bay, Java);
Verh. Batavia. Genoot. (Nat. Ich.
Bengal), vol. 25, p. 48, 1853 (reference).
Nat. Tijds. Ned. Indië, vol. 7, p. 313,

Doules taeniurus Cuvier.

- Doules taeniurus Cuvier, Hist. Nat. Poiss., vol. 3, 1829, p. 114. Java. — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 267 (Chinese Sea). — Kner, Reise Novara, Zool., vol. 1, pt. 5, 1865, p. 47 (Tahiti). — Day, Proc. Zool. Soc. London, 1870, p. 682 (Andamans). — Meyer, Ann. Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885, p. 13 (Viao, Vangi). — Gorgoza, Ann. Soc. Españ. Hist. Nat. Madrid, vol. 17, 1888, p. 284 (Manila Bay). — Jatzow and Lenz, Abhandl. Senckenberg. Gesell., vol. 21, 1889, p. 500 (Zanzibar). — Elera, Cat. Fauna Filip., 1895, p. 471 (Luzon, Manila Bay). — Doules taeniurus Quichenot, Notes Ile Réunion, vol. 2, 1862, p. 24. — Moronopsis taeniurus Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1873-76, p. 119 (Java, Sumatra, Borneo); vol. 8, 1876-77, pl. (67) 345, fig. 5.

1854 (Bantem); vol. 11, p. 385,
 1856 (Kajeli, Buru), p. 419
 (Muntok, Banka); Act. Soc. Sci.
 Ind. Néerl., vol. 1, no. 3, p. 5, 1856
 (Manado); vol. 1, no. 5, p. 6, 1856
 (Amboina); vol. 2, no. 7, p. 5, 1857
 (Amboina); hat. Tijds. Ned. Indië,
 vol. 13, p. 56, 1857 (Kajeli, Buru);
 Act. Soc. Sci. Ind. Néerl., vol. 3, no.
 9, p. 4, 1857-58 (Trussan, Sumatra);
 hat. Tijds. Ned. Indië, vol. 16, p.
 27, 1858 (East Indies; diagnosis
 in key); Act. Soc. Sci. Ind.
 Néerl., vol. 8 (Sumatra), p. 12, 1859
 (Benculen); vol. 8 (Sumatra 9), p. 8,
 1860 (Telokbetong, Benculen, Padang);
 hat. Tijds. Ned. Indië, vol. 21, p. 138,
 1860 (Muntok, Banka); Verslagen.
 Akad. Wet. Amsterdam, vol. 12, p. 64,
 1861 (Pinang). — Günther, Cat. Fish

13560, 13562 to 13567; 13901 to 13905,
13908 to 13921, 18120, 18122 to 18125, 18127
to 18129, 18237 and 18238, 18241, 18243
to 18245. Limbina Stream, Limbina,
Dutch East Indies. December ^{5th} 7, 1909.

Length 62 to 196 mm.

9736 to 9738, 13493, 21217. River
Uksi, Bouro Island. December 9, 1909.

Length 73 to 212 mm. 17 examples.

19903. Tawao River, Sibuko Bay,
Borneo. September 30, 1909. Length 111
mm.

Brit. Mus., vol. 3, p. 434, 1861

(~~Indragirivallabha~~, Ambayna).

~~Wm. Fisher & Mula Bar, P. M. M.~~

— Klunginger, Verh. zool. Bot.

Gesell. Wien, vol. 20, p. 830, 1870

(Red Sea). -- Day, Fishes of India,
pt. 2, p. 349, pl. 74, fig. 3, 1876

Orissa, Bombay, — Klingzinger,
Fische Roth. Meer, p. 132, 1884 (part).

Quoy, Fauna British India, Fishes,
vol. 2, p. 342, 1881. & - Weber,
Zool. Forschungs. Austral. Vemon,
vol. 5, p. , 1895 ().

— Duncker, Mitteil. Naturh. Mus.
Hamburg, vol. 21, p. 166, 1903 (1904)
(Singapore). — Jugmayer, Abhandl.

Kon. Bayer, Abhandl. Wiss., vol. 26,
Suppl. Band 6, p. 20, 1913 (Gwadar).

— Regan, Trans. Zool. Soc. London,
vol. 20, pt. 6, p. 276, 1914 (Mimika

Mindanao. August 6, 1909. Length
69 to 212 mm. 37 examples.

11438. Pucot River, Mariveles Bay,
Manilla Bay. January 29, 1909. Length
65 to 184 mm.

5870 to 5876, 5878 to 79. Small stream
at Van Roque, Leyte Island. July 29,
1909. Length 45 to 175 mm. 20 examples.

~~5636~~, 7266 to 7268, 12308, 12315 and 12316.
Stream at Magnas, Lagonoy Gulf,
Luzon. June 17, 1909. Length 38 to 202
mm. 32 examples.

5636. Stream at Magnas. April 4, 1909.
Length 98 mm.

7645 to 7648, 1701, 17222, 17224 to 17226,
21571, 21572, 22117, 20120, 22121. Juna
River, Legaspi. June 7, 1909. Length 70
to 215 mm. 15 examples.

9231 to 9233, 21006. Zamboango River.
October 9, 1909. Length 130 to 200 mm.

River, New Guinea). — Pellegrin,
 Bull. Soc. Zool. France, vol. 39,
 p. 224, 1914 (Diego Suarez and
 Mahambou, Madagascar). ✓ Mc

— Barnard, Ann. South Afric. Mus., vol.
 21, pt. 1, p. 304, June 1925 (Delagoa Bay).

(reference). — Cowler, Mem. Bishop
 Mus., vol. 10, p. 123, 1928 (compiled).

— Tirant, Rev. Océanogr. Pêch.

Indo Chine, p. 171, 1928 (Saigon).

— Hardenburg, Treubner, ^{vol. 13} Rev. 13
 p. 125, July 1931 (Kobun River mouth,
 Sumatra). — Chevey, Inst. Océan.

Indo Chine, 17^e note, p. 19, August
 25, 1932 (Cochin China; Tonkin).

— Pellegrin, Mém. Mus. Malgache,
 vol. 14, p. 172, fig. 94, 1933 (Nosy Bé).

River, New Guinea). — Pellegrin,
 Bull. Soc. Zool. France, vol. 37,
 p. 224, 1914 (Ligeo Hureux and
 Mahambo, Madagascar). — Mc
Culloch and Whitley, Mem. Queensland
 Mus., vol. 8, pt. 2, p. 141, July 7, 1925
 (reference). — Fowler, Mem. Bishop
 Mus., vol. 10, p. 123, 1928 (compiled).
 — Tirint, Verw. Océanogr. Pêch.
 Indo Chine, p. 171, 1924 (Saigon).
 — Hardenbury, Traub, ^{vol. 13} Verw. 13,
 p. 125, July 1931 (Rokan River mouth,
 Sumatra). — Chevey, Inst. Océan.
 Indo Chine, 17^e note, p. 19, August
 25, 1932 (Cochin China; Tonkin).
 — Pellegrin, Mém. Mus. Malgache,
 vol. 14, p. 172, fig. 94, 1933 (Hosi Bé).

4036. Kabalat Point, Samar.

July 24, 1904.

A 135th. Great Tobea Island.

Handwritten notes on the right margin, partially obscured, including the words "Cullloch" and "referred to".

9576, 9578 to 9580. Mahunog River,
Carriguin Island. August 3, 1909.
Length 165 to 167 mm. 40 examples.

5552, 5553, 5555, ~~5556~~ to 5561.

Malatgas and Cannia Rivers, Puerta
Princesa, Palawan. April 4, 1909.
Length 111 to 185 mm.

4906 and 4907. Malinao River,
Palawan Island. April 21, 1909.
Length 38 to 170 mm. 5 examples.

^{14460, 17938,}
^{19262, 19263, 19266,} ^{19267.} Mananga River,
Cebu. August 25, 1909. Length 30 to 200 mm.
8 examples.

11678 [1111]. Mariveles Bay, Manila Bay.
January 30, 1909. Length 175 mm.

22137. Murcielagos Bay, Cascade River,
Mindanao. August 20, 1909. Length
135 mm.

^{6348,}
¹ 5342 to 5346, 11925 to 11934, 11968, 11969,
21155, 21789. Nonucan River, Camp Overton,

Mugil cuneatus Klunzinger, Verh.
 Geol. Bot. Ges. Wien, vol. 25, p.
 830, 1870 (Red Sea). — Borodin,
 Bull. Vanderbilt Marine Mus.,
 vol. 1, art. 3, p. 76, 1932 (Brestane,
 Australia).

Mugil squamipinnis Swainson,
 Nat. Hist. Animals, vol. 2, p. ²³⁴~~414~~,
 1839 (name only).

~~Mugil unguis (art. Blacker),
 Fishes of Malabar, p. 131, 1865.~~

Mugil squamopennis Swainson, Nat.
 Hist. Animals, vol. 2, p. 413, 1839
 (type locality, Ganges River).

864

10661 and 10662. Basud River, Luzon,
fresh water. June 15, 1909. Length **210**
to **220** mm.

5563. Batangas market. June 7, 1908.
Length 186 mm.

19264. Busbus Point, Siasi Island,
between Jolo and Tawi Tawi. September 20,
1909. Length 160 mm.

2 examples. Calugan River, 3 miles
from mouth near Paluan Bay,
Mindoro. December 11, 1908. Length 32 to 47 mm.

23737 to 23739. Dumaco River, Luzon.
February 25, 1909. Length 90 to 100 mm.

5813 to 5815, 5817 to 5823, Iwahig
River and tributaries, Puerto Princesa,
Palawan. April 4, 1907. Length 80 to
139 mm. 16 examples.

11385, 11388, 11389. Joni River, Jayabas
Island. February 25, 1909. Length 129
to 144 mm.

~~Mugil longimanus~~

- Mugil longimanus Günther, Cat. Fish. Brit. Mus., vol. 3, p. 428, 1861 (type locality, East Indies). — Klunzinger, Sitzb. Ber. Akad. Wiss. Wien, math.-naturw. Kl., vol. 80, pt. 1, p. 375, 1871 (1880) (Cleveland Bay); Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. 41, pt. 1, p. 5, 1879 (Cleveland Bay). — Macleay, Proc. Linn. Soc. New South Wales, vol. 9, p. 41, 1884 (copied). — De Vis, Proc. Linn. Soc. New South Wales, vol. 9, p. 70, 1885 (Brisbane). — Ogilby, Cat. Fish. New South Wales, p. 41, 1886. — Saville-Kent, Great Barrier Reef, pp. 244, 370, 1893. — Jordan and Seale, Bull. Bur. Fisher., vol. 26, p. 10, 1906 (1907).

e.¹ Head more or less rugose striate above and on muzzle; soft dorsal and anal fins scaleless; pectoral shorter than ventral.

f.¹ Belonopercinae. Head attenuated, pipe like; scales about 50; D.

VI - I, 10; A. I, 8.

Belonoperca

f.² Diploprioninae. Head deep, blunt in profile; scales over 100;

D. VIII - 15; A. III, 13. Diploprion

e.² Head without rugose striae on cranium or muzzle; soft dorsal and anal fins more or less scaly basally; paired fins subequal or pectoral longer than ventral.

g.¹ Dorsal spines 5 to 9; preopercle edge entire or minutely or irregularly serrate; maxillary with supple-
mental bone; scales 45 to 50;
anal rays 7 or 8.

(Cavite), — Ogilby, Ann. Queensland
Mus., no. 7, p. 26, 1908^{part} (compiled).

— Seale, Philippine Journ. Sci.,
vol. 9, p. 61, 1914 (Hong Kong). —

McCulloch, Rec. Austral. Mus.,
vol. 13, no. 4, p. 130, April 12, 1921

Bombay; Philippines. — McC

— Weber and Beaufort, Fish. Indo
Austral. Archip., vol. 4, p. 239, 1922
(Java Sea, Java, Puger, Makassar).

— Seale, Zool. Anz., no. 1,
p. 9, 1927 (Christmas and Palmyra
Islands); Proc. Acad. Nat. Sci.

Philadelphia, vol. 79, p. 263, 1927

(Lani; Orion); Ann. Bishop Mus.,
vol. 10, p. 123, 1928 (Christmas and

Palmyra materials). — Chu,

Biol. Bull. St. John's Univ., no. 1, p.

104, January 1931 (reference).

— McCulloch, Mem. Austral. Mus., vol. 5, pt. 1, p. 115,
June 29, 1929 (reference).

(Cavite), — Ogilby, Ann. Queensland
Mus., no. 9, p. 26, 1908 ^{part} (compiled).

— Seale, Philippine Journ. Sci.,
vol. 9, p. 61, 1914 (Hong Kong). —

McCulloch, Rec. Austral. Mus.,
vol. 13, no. 4, p. 130, April 12, 1921

Bombay; Philippines. — McC

Culloch and Whitley, Mem.

Seale Queensland Mus., vol. 8, pt. 2, p.

series of 41, July 7, 1925 (reference). — Proc. Acad. Nat. Sci. Philadelphia, vol. 77, 1925, p. 208 (Delagoa Bay);
1 Fowler, Bull. Bishop Mus., no. 38,

p. 9, 1927 (Christmas and Palmyra
Islands); Proc. Acad. Nat. Sci.

Philadelphia, vol. 79, p. 263, 1927

(Orani; Orion); Mem. Bishop Mus.,

vol. 10, p. 123, 1928 (Christmas and

Palmyra materials). — Chu,

Biol. Bull. St. John's Univ., no. 1, p.

104, January 1931 (reference).

— McCulloch, Mem. Austral. Mus., vol. 5, pt. 1, p. 115,
June 29, 1929 (reference).

g.² Brownish, 16 series of cheek scales Culloch

f.² Molars triserial or more than 3 series of nasutus meensla

h.¹ Five to 7 series of scales Fowler, Proc. Acad. Nat. Sci. Phila.

h. ¹ Chorististinae. Two separate dorsals, not joined at base; lower jaw without 2 forward projecting denticles at tip; lower gill rakers 13; caudal peduncle deep.

Chorististium

h. ² Malakichthyinae. Two dorsals, joined narrowly at their basal intersection; lower jaw with 2 forward projecting denticles at tip; lower gill rakers 23; caudal peduncle slender.

Malakichthys

g. ² Moroninae. Dorsal spines 11 or 12; body elongated; preopercle edge minutely serrate; scales small, 100 or more (larger in extralimital genera).

Mugil engeli (not Bleeker 1858)
Day, Proc. Zool. Soc. London, 1865,
p. 33 (Cochin, India); Fishes
of Malabar, p. 139, 1865.

Mugil banksi Seale, Philippine
Journ. Sci., vol. 4, no. 6, p. 501, pl.
5, November 1909 (type locality,
Siquijor Island, Philippines).

Cm¹⁷⁹

Sparus latus Houttign

Sparus latus Houttign, Verhandel.
Holland. Maatsch. Haarlem, vol. 20,
 1782, p. 322. japon. $\frac{1}{n}$ Bonnaterre,
Tabl. Ichth., 1788, p. 102 (seas of japon).
 $\frac{1}{n}$ Gmelin, Syst. Nat. Linn., ^{vol. 1,} 1789, p. 1276
 (japanese seas). $\frac{1}{n}$ Walbaum, Artedi
Pisc., vol. 3, 1792, p. 300 (on Gmelin).
 $\frac{1}{n}$ Forster, Fauna Indica, 1795, p. 15. $\frac{1}{n}$
Schneider, Syst. Ichth. Bloch, 1801, p.
 254 (japon). $\frac{1}{n}$ Jordan and Thompson,
Proc. U. S. Nat. Mus., vol. 41, 1912, p. 553,
 fig. 10 (Kobe and Wakanoura). $\frac{1}{n}$ Vigil,
Proc. U. S. Nat. Mus., vol. 42, 1912, p. 415
 (Tokyo and Kagoshima). $\frac{1}{n}$ Jordan and
Thompson, Mem. Carnegie Mus., vol. 6,
 no. 4, 1914, p. 256 (Osaka). $\frac{1}{n}$ Jordan and
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,
 1925, p. 240 (Bay of Miikawa). $\frac{1}{n}$ Oshima,
Jap. Journ. Zool. Zool. Abstracts, vol. 1,

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Depth $3\frac{2}{5}$ to 4; head $3\frac{2}{5}$ to 4,
width $1\frac{1}{2}$ to $1\frac{3}{4}$. Snout $3\frac{4}{5}$ to 4
in head; eye $3\frac{1}{2}$ to 4, subequal
with snout, $1\frac{1}{2}$ to $1\frac{3}{4}$ in
interorbital, adipose lids covering
 $\frac{1}{4}$ to $\frac{1}{3}$ of iris; maxillary concealed,
reaches eye; upper lip width
half of pupil; mandibular angle
would form broadly obtuse;
mouth width 3 to $3\frac{1}{5}$ in head;
interorbital $2\frac{1}{3}$ to $2\frac{1}{2}$, broadly
convex; lower preorbital edge
finely dentate. Gill rakers ^{20 to} 40 + 50,
fine, slender, setiform, $1\frac{1}{4}$ in
gill filaments which equal eye.

Scales 30 to 33 in lateral
axial series to caudal base; 12
transversely, 19 or 20 predorsal.
Most of soft vertical fins finely
scaled, at least basally. Axillary

- Chilodipterus macrodon Klunzinger,
~~Fische~~ Roth. Meer., 1884, p. 23. — Day,
Fauna Brit. India, vol. 1, 1889, p. 501.
 — Zugmayer, Abhandl. Bayer. Akad. Wiss.,
 vol. 26, pt. 6, 1913, p. 10 (Oman).
Cheilodipterus macrodon McCulloch, Proc.
Lin. Soc. New South Wales, vol. 46, no. 4,
 1921, p. (Palm Island, Queensland).
Cheilodipterus octovittatus Cuvier, Hist.
Nat. Poiss., vol. 2, 1828, p. 163. Mauritius.
 — Guichenot, Notes Ile Reunion, vol. 2,
 1862, p. 23. — Playfair, Fishes of Zanzibar,
 1866, p. 21 (Zanzibar and Johanna). —
Klunzinger, Verh. zool. bot. Gesell. Wien,
 vol. 20, 1870, p. 717 (Koseir, Red Sea). —
Peters, Monatsb. Akad. Wiss. Berlin,
 1876, p. 436 (Mauritius). — Macleay, Proc.
Lin. Soc. New South Wales, vol. 7, 1882,
 p. 236.

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pectoral scale $2\frac{1}{3}$ in fin. Scales with 4 to 6 basal radiating striae, apical fringe of 35 points; Circuli fine.

D. IV — I, I, 7, I or I, 8, I, first spine $1\frac{3}{5}$ to 2 in head, first branched ray $1\frac{3}{4}$ to 2; A. III, 9, I, first branched ray $1\frac{3}{5}$ to 2; least depth of caudal peduncle $2\frac{1}{3}$ to $2\frac{3}{5}$; origin of soft fin at first $\frac{2}{5}$ of anal base; pectoral 1 to $1\frac{1}{10}$, reaches beyond spinous dorsal origin; ventral $1\frac{1}{3}$ to $1\frac{2}{5}$; caudal $3\frac{2}{5}$ to $3\frac{1}{2}$ in rest of fish, deeply emarginate behind.

Back gray brown, rows of scales on back and side above with gray brown line. Under surface whitish. Dorsals, caudal and pectoral grayish, last dusky

Paramia lineata Bleeker, Ned. Tijds.
 Dierk., vol. 1, 1863, p. 344 (Madagascar).

Perca arabica Gmelin, Syst. Nat. Linn., vol. 1,
 1789, p. 1312 (on Forskäl). — Schneider,
 Syst. Ichth. Bloch, 1801, p. 85 (Arabia).

Centropomus arabicus Lacépède, Hist. Nat.
 Poiss., vol. 4, 1802, pp. 249, 257 (Arabia).

Cheilodipterus arabicus Cuvier, Hist. Nat.
 Poiss., vol. 2, 1828, p. 165, pl. 23 (Lohaja).

Centropomus macrodon Lacépède, Hist. Nat.
 Poiss., vol. 4, 1802, pp. 252, 273. Mauritius and
 Reunion.

Paramia macrodon Bleeker, Atlas Ichth.
 Ind. Néerl., vol. 7, 1873-76, p. 105 (Batu,
 Singapore, Java, Bawean, Celebes, Batjan,
 Amboina). — Jordan and Seale, Bull.
 Bur. Fisher., vol. 25, 1905 (1906), p. 252
 (Apia and Samoa). — Weber, Siboga
 Exped., vol. ^{52. Dierk.} 65, 1913, p. 239 (Saleyer).

basally. Lower fins and iris
whitish.

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~~Ac.~~ A. N. S. P., one example. Selaya-
Bay, Portuguese ~~East~~ East Africa.
H. W. Bell Markey: 1922. Length
148 mm.

A. N. S. P., one example. Christmas
Island, Polynesia. Bishop Museum.
Length ~~148~~ mm.

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Cheilodipterus lineatus Klunzinger,
Verh. zool. bot. Ges. Wien, vol. 20, 1870,
p. 717 (Koser, Red Sea). — Day, Fishes
of India, pt. 1, 1875, p. 66, pl. 18, figs.
8-9 (Gwadar). — Borsieri, Ann. Mus.
Civ. Genova, vol. 41, 1904, p. 192 (Sciumma
on Laalac Island). — Beaufort, Bijdr.
Dierk., Amsterdam, 1913, p. 116 (Butan).
— Fowler, Copeia, no. 58, June 18, 1918, p.
63 (Philippines); Proc. Acad. Nat. Sci.
Phila., 1927, p. 274 (Philippine materials).

One example. Cotabato, Mindanao.
 October 26, 1903. Length 86 mm.
 Called "Balunac".

27 examples. Iloilo River, shore
 above Iloilo, Panay. June 2, 1908.
 [643.] Length 67 to 198 mm. Adupe
 cyclical. Head, narrow or absent in
 young. Axillary pectoral scale
 $\frac{1}{2}$ pectoral, which equals head,
 $2\frac{2}{3}$ in pectoral in young. A. III, I, I.
 Dark spot at pectoral origin.

Two examples. Manila Bay, Luzon.
 December 6, 1907. Length 54 to 80 mm.

One example. Manila Harbor.
 March 16, 1908.

Six examples. Zamboanga Bay,
 Mindanao. February 6, 1909. Length
 50 to 110 mm. Young without adipose
 fins. Caudal peduncle deep. Pectoral
 $1\frac{1}{3}$ in head, axillary scale very short.

^{no.} First dorsal dusky, with first spine
blackish. Second dorsal dusky, red
brown bar across middle somewhat
nearer base. Anal similar to soft
dorsal, with brown bar nearer base,
continued on lower edge of caudal
peduncle. Caudal dusky. Paired fins
slightly dusky. Fins dark.

1 example. Tomahu Island. December 11,
1909. Length 32 mm.

No distinct dark spot at pectoral
origin in smallest.

P. 24130.

Length 82 mm.

4 examples. Rasa, Mantaguin Bay,
Palawan Island. April 1, 1909.
Length 33 to 34 mm.

35 examples. Naboon Island, Ragay
Bay, Ragay Gulf, Luzon. March 10, 1909.
Length 20 to 30 mm.

17 examples. Tatan Islands, Tawi Tawi
Group. February 21, 1908. Length 34 to 39
mm. [274.] (Type, no. , U.S.N.M.)

Body translucent, general color dusky
~~up to 34 mm. above with median~~
~~up to 34 mm. above with median~~
narrow black line. Axial line of
opalescent green margined with
blackish above, ending in a brilliant
scarlet blotch larger than pupil at
caudal base. Purplish stripe behind
eye across opercle, bordered on either
side by black. Chin and nose black.
Top of head dusky with short silvery
olive stripes. Lower head and breast white.

Mugil engeli Bleeker

Mugil engeli Bleeker, Nat. Tijds.
Ned. Indië, vol. 16, p. 277, 1858
(type locality, East Indies; diagnosis
in key); vol. 15, p. 385, 1858,
Batavia; name only); vol. 17, p. 143,
1858-59 (Boleling, Bali); Act. Soc.
Sci. Ind. Néerl. Sumatra), vol. 8,
p. (12) 78, 1859 Benculen; Java;
Bali). — Günther, Cat. Fish. Brit.

Mus., vol. 3, p. 430, 1861 (copied. —

Fowler, Bull. Bishop Mus., no. 22,
p. 32, 1925 (Samoa); Mem. Bishop

Mus., vol. 10, p. 122, 1928 (Strong
Island; Ponapé); vol. 11, no. 5, p.

324, 1931 (reference).

— Weber and Beaufort, Fish. Indo Austral
Archip., vol. 4, p. 238, 1922 (Pulu Weh,
Sumatra; Simalur; Nias; Tjilatjap,
Java).

Therapon unicolor (non Günther) Kner,
Sitzungsber. Akad. Wiss. Wien, vol. 58,
1868, pt. 1, p. 300, pl. 2, fig. 4 (Kandavu,
^{Rockhampton,} Fiji; Queensland).

Dules marginatus (non Cuvier) Day,
Fishes of India, pt. 1, 1875, p. 67, pl. 18, fig.
1; Fauna Brit. India, vol. 1, 1889, p.
503, fig.

Dules haswellii Macleay, Proc. Linn.
Soc. New South Wales, vol. 5, 1880, p. 350.
Rockingham Bay, Queensland; ser. 2, vol. 1,
1886, p. 882 (Cairns).

Dules haswellii Kent, Great Barrier
Reef, 1893, p. 282 (Brisbane River).

Kuhlia rupestris hesleyi Ogilby, Proc.
Linn. Soc. New South Wales, vol. 22,
1897, p. 761. New Caledonia.

— Pellegrin, Mém. Acad. Malgache,
vol. 14, p. 172, 1933 (Madagascar
material).

Houttuyn is evidently synonymous with Scomber japonicus Houttuyn, printed previously in the same work. If Pagrosomus major (Schlegel) be admitted as distinct, as suggested by Jordan and Thompson in 1912, Houttuyn's Sparus auratus falls with it. In my "Fishes of Oceania" I also united Pagrosomus auratus (Schneider) with Pagrosomus major (Schlegel), as these two so called species are only slightly distinct and largely accepted in their geographical distribution. ~~These Philippine specimens~~ ^{record} ~~are~~ ^{have been} ~~based on~~ ^{imported} ~~specimens~~ ^{market} ~~specimens~~.

49331 to 49333 A.N.S.P. Melbourne, Australia. Mrs. Agnes F. Kenyon. Length 286 to 293 mm.

Mugil kalaartu Günther, Cat.

Fish. Brit. Mus., vol. 3, p. 429, 1861

(type locality, Point de Galle,

Ceylon; Philippines). — Peters,

Monatsb. Akad. Wiss. Berlin, p. 263,

1868. — Day, Fishes

of India, pt. 2, p. 352, pl. 73, fig. 1,

1876. — Günther, Journ. Mus.

Godeffroy, vol. 5, p. 215, pl. 121, fig.

1, 1876 (Tahiti; Raiatea).

Schmeltz, Cat. Mus. Godeffroy, no. 8, p. 6, 1881 (Papeete).

Day, Fauna British India, Fishes,

vol. 2, p. 346, 1889. — Elera, Cat.

Fauna Filipinas, vol. 1, p. 537, 1895

(Luzon, Manila, Navotas). —

Fowler, Proc. Acad. Nat. Sci.

Philadelphia, 1900, p. 500 (Hawaii);

1903, p. 743 (same material). —

Seale, Occas. Pap. Bishop Mus.,

vol. 4, no. 1, p. 15, 1906 (Tahiti). —

~~Dules fusus Guichenot, Notes de
Runion, vol. 2, 1862, p. 24.~~

~~Moronopsis fusus Steindachner, Vitz.
Acad. Mus. Wien, vol. 82, pt. 1, 1880, p. 240
Thyridina, Malagascaria.~~

Dules guamensis Valenciennes, Hist. Nat.
Pois., vol. 7, 1831, p. 474. Guam. —
Hambron and Jacquinet, Voyage Astrolabe
et Zélée, Zool., vol. 3, 1853, p. 42, pl.
3, fig. 1 (type). — Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 269. — Macleay,
Proc. Linn. Soc. New South Wales, vol. 8, 1883,
p. 257 (fresh waters Hornumby Island,
New Guinea).

Dules vanicolensis Valenciennes, Hist. Nat.
Pois., vol. 7, 1831, p. 478. Vanicolo. —
Hambron and Jacquinet, Voyage Astrolabe
et Zélée, Zool., vol. 5, 1853, p. 42, pl. 3, fig.
2 (type).

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Oshima, Ann. Carnegie Mus., vol.
~~xxxxxxx~~ 13, nos. 3-4, p. 248, April
25, 1922 (Tokio, Formosa).

Mugil kelaarti Günther, Rep.
Voy. Challenger, vol. 1, pt. 6, p. 58,
1880 (Tongatabu). — Jordan and
Seale, Bull. Bur. Fisher., vol. 25,
p. 217, 1905 (reference). — Pellegrin,
Bull. Mus. Hist. Nat. Paris, 1907, p. 202 (Nongobory,
→ Madagascar).
Mugil kelaarti Steindachner,
Sitzs. Ber. Akad. Wiss. Wien,
Math.-naturw. Kl., vol. 115, pt. 1,
p. 1416, 1906 (Upolu).

Mugil kelaarti Pöhl, Cat. Mus.
Godeffroy, no. 9, p. 34, 1884 (Ponapé).

- Moronopsis rupestris Bleeker, Atlas Ichth.
Ind. Néerl., vol. 7, 1873-76, p. 121, pl. (61)
 339, fig. 2 (Timor, Batjan, Buru, Amboina).
Perea ciliata (Kuhl and Van Hasselt)
Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p.
 52. Fresh waters of Bantam, Java.
Percichthys ciliata Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 62 (copied).
Aulax fuscus Cuvier, Hist. Nat. Poiss.,
 vol. 3, 1829, p. 118. Bourbon. — Peters,
Arch. Naturgesch., 1855, p. 238 (Kinjoana
 Island, fresh water, Mozambique). —
Günther, Cat. Fishes Brit. Mus., vol. 1,
 1859, p. 268 (copied). — Playfair, Fishes of
Zanzibar, 1866, p. 22 (Johanna Island).
 — Peters, Naturw. Reise Mossambique, Zool.,
 1868, p. 10. — Martens, Reise Ostafrika,
 des Lecken, vol. 3, pt. 1, 1869, p. 141 (Mauritius).
Savigny, Hist. Nat. Madagascar, Poiss.,
 1800, p. 170, pl. 1, fig. 14.

(2377)³

Depth $3\frac{1}{2}$ to $3\frac{7}{8}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$, width $1\frac{3}{5}$ to $1\frac{2}{3}$. Snout $3\frac{4}{5}$ to $4\frac{1}{8}$ in head; eye $3\frac{4}{5}$ to 4, greater than snout, $1\frac{4}{5}$ in interorbital; maxillary concealed; length 4 to $4\frac{1}{2}$ in head; mouth as seen below would form obtuse angle; no teeth; interorbital $2\frac{1}{3}$ to $2\frac{3}{5}$ in head; preorbital minutely serrated. Gill rakers $38 + 44$, finely lanceolate, $\frac{1}{2}$ of gill filaments, which equal eye.

Scales 32 or 33 in median or axial lateral series to caudal base; 11 transversely, 20 predorsal. Scales with 5 or 6 basal radiating striae, also 1 or 2 incomplete auxiliaries, edge scalloped; circuli fine.

D. IV I, 8, I, first spine $1\frac{3}{4}$ to

$1\frac{4}{5}$ in head, first branched ray
 2 to $2\frac{1}{8}$; A. III, 9, I, third spine
 $1\frac{7}{8}$ to $2\frac{4}{5}$, first branched ray
 $1\frac{3}{4}$ to $1\frac{4}{5}$; least depth of caudal
 peduncle $2\frac{2}{5}$ to $2\frac{3}{5}$; caudal 1,
 deeply emarginate behind;
 pectoral $1\frac{1}{8}$ to $1\frac{1}{6}$; ventral $1\frac{2}{5}$
 to $1\frac{1}{2}$.

Back olivaceous. Below pale
 to white. Iris whitish. Vertical
 fins and pectoral dull brown.
 Ventral pale or light brown.

Madagascar, Ceylon, East Indies,
 Philippines, Formosa, Micronesia,
 Polynesia, Hawaii.

One example. Atulayan Bay,
Luzon. June 17, 1909. Length 71 mm.
Adipose list. Scales 34. Pectoral
with axillary scale. $a. \underline{\text{III}}, 9, \underline{\text{I}}.$

Four examples. Balayan Bay,
Tulu Archipelago. February 18, 1908.
Length 13 to 22 mm.

Ten examples. Batangas, Luzon
River. June 7, 1908. Length 36 to
44 mm. Scales 33. $a. \underline{\text{III}}, 9, \underline{\text{I}}.$

Fifteen examples. Buena Vista,
Guimaras Island. January 14, 1909.
Length 53 to 104 mm. Adipose eyelids
narrow. Maxillary concealed.
Scales 30 to 33. $a. \underline{\text{III}}, 9, \underline{\text{I}}.$ Pectoral
 $1\frac{1}{6}$ in head, axillary scale $2\frac{3}{4}$ in
fin.

One example. Bulan Island, Zamboanga
Group. September 13, 1909. Scales 31.
Axillary scale present. Length 54 mm.

Amia hypselonotus (Bleeker)

Apyron hypselonotus Bleeker, Nat.
 Tijds. Ned. Indië, vol. 8, 1855, p. 309.
 Batu Archipelago. — Günther, Cat.
 Fishes Brit. Mus., vol. 1, 1859, p. 232
 (copied); Journ. Mus. Godeffroy, vol.
 1, pt. 1, 1873, p. 20 (South Pacific).
Amia hypselonotus Bleeker, Atlas
 Ichth. Ind. Néerl., vol. 7, 1873-76, p. 94,
 pl. (75) 353, fig. 4 (Batu, Nias, Banka,
 Java, Bali, Celebes, Timor, Ternate,
 Ceram, Goram, Ambonia, Am). —
Fowler, Proc. Acad. Nat. Sci. Phila., 1927,
 p. 274 (Philippines).

Twelve examples. Chase Head,
mouth of stream near by in brackish
water, Endeavour Strait, Palawan.
December 22, 1908. Length 27 to 97 mm.
No adipose fins. Scales 33. Pectoral
axillary scale present. $a. \text{III}, 9, \text{I}$.
Pectoral $1\frac{1}{4}$ in head. Bright silvery,
back drab. Fins whitish.

31 examples. Lirao, Mindanao.
May 16, 1905. Length 3 to 11 1/2 mm.
Pectoral with moderate axillary scale.

Fifteen examples. Estero, Subayan
Bay, Mindoro. December 13, 1908.
Length 40 to 60 mm. Scales 53.

71 examples. Makinog in brackish
water, Cuyayan Island. August 3,
1909. Length 34 to 155 mm. a up to

16628 to 16633. Hulade Island.
February 16, 1908. Length 68 to 81 mm.
D. 5146.

eye is rather broad. Scales 30 to 35.
li. III, 1, I. Pectoral $1\frac{1}{5}$ to $1\frac{1}{4}$ in.
 head, axillary scale $\frac{1}{2}$ of fin.

Two examples. Makabung anchorage.
 May 21, 1908. Length 37 to 40 mm.

Four examples. Manila Harbor,
 Luzon. March 16, 1908. Length 39 to 61 mm.

Three examples. Manila Harbor.
 December 30, 1907. Length 40 to 45 mm.

Fifteen examples. Luman River,
 Mindoro. December 11, 1905. Length
 35 to 65 mm.

One example. Panabutan Bay,
 Mindanao. February 5, 1908. Length
 37 mm. Scales 35. li. III, 1, I.

Two examples. Panabutan Bay.
 February 6, 1908. Length 110 to 124 mm.

3 examples. Batangas market.
June 7, 1908. Length 57 to 81 mm.

4 examples. Jolo. February 14, 1908.
Length 84 to 98 mm. D. 5136.

2 examples. Jolo. March 5, 1908.
Length 64 to 77 mm. D. 5174.

23702. Jolo. March 6-7, 1908.
Length 70 mm.

3 examples. Mansalay, Mindoro.
June 4, 1908. Length 61 to 68 mm.

1180. Tagbilaro Island, Capulaan Bay.
February 24, 1909. Length 45 to 50 mm.

2035 and 2036. Sulade Island, Sulu
Archipelago. February 16, 1908. Length
70 to 72 mm. D. 5147.

One example. Tugayauron River,
 Port Calton, Luzon. December 16, 1908.
 Length 45 mm. Scales 35.

Two examples. Pasacao in river,
 Luzon. March 9, 1909. Length 56
 to 81 mm. Scales 31.

Five examples. Fort Galera, Mindoro.
 June 9, 1908. Length 20 to 74 mm.

Nine examples. Fort Janelo, two
 miles up river, Luzon. July 13, 1908.
 Length 33 to 56 mm. Eye $3\frac{1}{2}$. Silvery,
 with light fins.

Three examples. Pucot River,
 Mariveles. January 29, 1909. Length 77
 to 115 mm.

4984 to 4986. Raway River in fresh water,
 Raway Gulf, Luzon. March 10, 1909.
 Length 52 to 57 mm. Eight examples.

Our specimens appear to be the same as those described by Bleeker. He makes no mention of the spot at the base of the posterior rays of the second dorsal or traces of stripes on the back and opercle.

One example. San Miguel Harbor,
Icaño Island. April 2, 1902.
Length 47 mm.

Nine examples. Santa Maria, Vinígor
Island. August 11, 1907. Length 32
to 41 mm.

Three examples. Vilino Island,
Tidal. August 10, 1907. Length 4 to
52 mm. Scales 32. Pectoral with
axillary scale.

One example. Paradero Bay,
Minoro, in small stream at head
of bay. July 24, 1922. Length 107 mm.

One example. Kemba, Gulf of Boni,
Celebes, Dutch East Indies. November
10, 1907. Length 75 mm.

Twelve examples. San Juan, Formosa.
January 27, 1910. Length 1 to 45 mm.
D. III, I, I.

Depth $2\frac{3}{5}$ to 3; head $2\frac{2}{5}$ to $2\frac{1}{2}$, width $2\frac{1}{2}$ to $2\frac{1}{10}$. Snout 4 to $4\frac{1}{8}$ in head; eye 3 to $3\frac{2}{5}$, greater than snout or interorbital; maxillary reaches $\frac{1}{2}$ to $\frac{3}{5}$ in eye, expansion 2 to $2\frac{1}{5}$, length $2\frac{1}{8}$ to $2\frac{1}{4}$ in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital 5 to $5\frac{1}{5}$, nearly level; preopercle ridge entire, edge finely and feebly serrated. Gill rakers 6 + 16, lanceolate, little longer than gill filaments or half of eye.

Scales 22 to 24 in lateral line to caudal base and 2 to 4 more on latter, 3 above, 6 below, 6 predorsal, 2 rows on cheek; head naked, except cheeks and opercles. Lateral line of tubes well exposed, simple,

Macleay, Proc. Linn. Soc. New
South Wales, vol. 9, p. 40, 1884
(copied. — de Vis, Proc. Linn.
Soc. New South Wales, vol. 9, p.
1885 Brisbane). — Day, Fishes of
India, Suppl., p. 800, 1888; Fauna
British India, Fishes, vol. 2,
p. 344, 1889. — Steindachner, Abhand.
Senckenberg. Gesell., vol. 25, p. 434,
1900 (Ternate). — Mc Culloch, Rec.
Austral. Mus., vol. 13, no. 4, p.
128, April 12, 1921 (India). —
Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 4, p. 236,
1922 (Pulu Weh; East Java; Java Sea; Lombok;
Makassar; New Guinea).
— Mc Culloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p.
141, July 7, 1925 (reference). — Reeves,
Journ. Pan Pac. Res. Inst., vol. 3,

least depth of caudal peduncle 3 to $4\frac{1}{8}$; pectoral $1\frac{3}{5}$ to $2\frac{1}{5}$; ventral $1\frac{3}{5}$ to $1\frac{7}{8}$.

Silvery gray brown, lower sides and under surface silvery white. In large examples back, chiefly above lateral line, also spinous and soft dorsal marked with many irregular dark spots, not extending on head or predorsal region. Iris brown and silvery. Dorsals and caudal pale gray brown, other fins pale brownish.

China and Japan. Though listed from the Philippines by Elera no other notice of its occurrence has been given.

6834. Hong Kong market. October 18, 1909. Length 356 mm.

2386
no. 2, p. 8, 1927 (reference). — Fowler,
mem. Bishop Mus., vol. 10, p. 122,
fig. 26, 1928 (Apia, King's Mills;
Guam); vol. 11, no. 5, p. 324, 1931

(Suva). — Chu, Biol. Bull. St.
John's Univ., no. 1, p. 104, January
1931 (reference).

— McCulloch, mem. Austral. Mus., vol.
5, pt. 1, p. 116, June 29, 1929 (reference).

— Fowler, mem. Bishop Mus.,

Genus Hiphon Cuvier.

Hiphon Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 131. Type hiphon spinosus Cuvier, monotypic.

Body compressed. Mouth large, protractile. Maxillary exposed, without supplemental bone. Villiform teeth in jaws, on vomer and palatines; tongue smooth. Preopercle serrate, with very strong spine at angle and few small antrorse spines on lower edge. Opercle with 3 strong spines. Gill membranes separate. Pseudobranchiae present. Gill rakers long and slender. Branchiostegals 7. Vertebrae 31, of which 17 caudal. Scales very small, ciliated. Head scaly. Lateral line complete, tubes straight and each occupies whole length of scale.

Mugil cephalus (not Linnaeus)
Buchanan - Hamilton, Fishes of
Ganges, pp. 219, 381, 1822.

Depth $3 \frac{2}{5}$ to $3 \frac{3}{5}$; head $2 \frac{1}{3}$ to $2 \frac{2}{5}$,
 width $2 \frac{1}{5}$. Snout $2 \frac{7}{8}$ to $3 \frac{1}{8}$ in
 head from snout tip; eye 4 to $5 \frac{3}{4}$,
 $1 \frac{1}{4}$ to $2 \frac{1}{8}$ in snout, much greater
 than interorbital in young to $4 \frac{1}{5}$
 with age; maxillary reaches slightly
 beyond front eye edge or opposite
 front pupil edge, expansion $1 \frac{2}{3}$ to
 2 in eye, length $2 \frac{1}{2}$ to $2 \frac{3}{5}$ in head
 from snout tip; teeth villiform,
 in bands in jaws, on vomer and
 palatines, none on tongue; interorbital
 5 to $5 \frac{1}{3}$, nearly level; strong spine
 at angle of ^{pref}opercle nearly long as
 eye with age and edge above serrate,
 also several large denticles on
 lower edge; ^{lower preorbital} edge finely serrate;
 opercular spines
 equidistant, lower most advanced.
 Gill rakers 7 + 17, lanceolate,
 longer than gill filaments or $1 \frac{1}{3}$ in

Muyil plumiceps Valenciennes, Hist.
nat. Poiss., vol. 11, p. 122, 1836
(type locality, Calcutta).

— Bleeker, Verh. Batavia. Genoots.
(Nal. Ich. Bengal), vol. 25, p. (48)
101, 1853 (Hooghly River, Calcutta);
vol. 26, pl. 1, fig. 5, 1857. —
Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 428, 1861 (Ceylon, Calcutta,
Pinang, China). — Kner, Reise
Novara, Fische, p. 225, 1865 (Juva,
Ceylon). — Day, Fishes of India,
pt. 2, p. 350, fig. (stomach), 1876.
{ — Bleeker, Ned. Tijds. Dierk., vol.
4, p. 143, 1873 (1874) reference).

— Elera, Cat. Fauna Filipinas, vol.
1, p. 537, 1895 (Luzon, Manila, Cavite).

— Josh, Parliam. Rep. Mar. Dep.
Queensland, vol. 17, p. —, 1903

Dorsal with 11 or 12 spines, soft fin
with spine and 10 or 11 rays and
shorter than spinous fin. Anal
spines 3, rays 1, fin short. Caudal
slightly emarginate. Pectoral rays
16 or 17, partly symmetrical, rounded,
upper rays longest. Ventral with
strong spine, below pectoral base,
fins close together.

Japan, Philippines.

(Jumping Pin, Moreton Bay). —

Uncker, Mitteil. Naturh. Mus.

Hamburg, vol. 21, p. 166, 1903 (1904)

(Kuala Melangor). — Jordan and

Seale, Bull. Bur. Fisher., vol.

25, p. 217, 1905 (1906) (reference). —

Evermann and Seale, Bull. Bur.

Fisher., vol. 26, p. 57, 1906 (1907)

(Bulan). — Juant, Rev. Ocean.

Pech. Indo Chien, p. 171, 1929

(Cochin China). — Chu, Biol. Bull.

St. John's Univ., vol. 1, p. 104,

January 1931 (reference).

Weber, Nova Guinea, vol. 9, Zool. pt. 4, p.

569, 1913 (Biwak Island and Lorentz River).

— Seale, Philippine Journ. Sci., vol.

9, p. 61, 1914 (Hong Kong).

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Hiphon spinosus Cuvier.

Hiphon spinosus Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 131, pl. 19. Japan.
— Schlegel, Fauna Japon., Poiss., pt. 1, 1842, p. 1, pl. 1, figs. 1-2 (coasts of southern provinces, Jesso). — Richardson, Ichth. China Jap., 1846, p. 222 (Japan). — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 80 (Japan); ^{Rep. Voy. Challenger, Zool., vol. 1, 1880, p. 63 (Yokohama).} — Steindachner and Döderlein, Denkschr. Akad. Wiss. Wien, vol. 47, pt. 1, 1883, p. 228 (Tokyo). — Boulenger, Cat. Fishes Brit. Mus., vol. 1, 1895, p. 124 (Yokohama). — Ishikawa and Matsuura, Prelim. Cat. Fishes Mus. Tokyo, 1897, p. 57 (Tokyo, Atsugi, Boshu). — Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 23, 1901, p. 353 (Tokyo), p. 750 (Yokohama); Annot. Zool. Japon., vol. 3, 1901, p. 72 (Yokohama and Nagasaki). —

Mugil (Liza) planiceps McCulloch
and Whitley, Mem. Queensland
Mus., vol. 8, pt. 2, p. 141, July 7,
1925 (reference).

Mugil cephalus

Smith and Pope, Proc. U. S. Nat. Mus.,
vol. 31, 1906, p. 468 (Kochi). — Jordan
and Richardson, Bull. Bur. Fisher.,
vol. 27, 1907 (1908), p. 255 (Luzon); Proc.
U. S. Nat. Mus., vol. 37, 1910, p. 431 (Misaki
and Philippines). — Jordan and Thompson,
Mem. Carnegie Mus., vol. 6, no. 6, 1914, p.
248 (Osaka and Misaki). — Izuka and
Watsuura, Cat. Zool. Spec. Tokyo Mus.,
1920, p. 154 (Boskin). — Jordan and
Hubbs, Mem. Carnegie Mus., vol. 10, no. 2,
1925, p. 234 (Tokyo, Toyama, Misaki,
Miyazaki, Fukuoka).

Mungil cephalotus (not Valenciennes
1836) Cantor, Journ. Asiatic Soc.
Bengal, vol. 18, pt. 2, p. 95, 1849
(1850).

50
faint, uniform. Vertical fins
with narrow white edges, otherwise
grayish. On dorsal dark gray
oblique bars sloping down
posteriorly. On last anal rays
2 or 3 white oblique narrow
lines. Caudal with 10 transverse
pale or gray white cross lines.
Pectoral gray, dark basally,
and followed by 3 whitish
and 3 dark transverse bands.
Ventral whitish.

Ophicephalus lucius Valenciennes.
One, 180 mm., Kratt. Scales 62
to caudal base; 6 above. Four rows
of alternate blackish spots, large
as or little larger than eye, on
side. On abdomen and lower
side of tail 10 to 12 dark short
bars, slightly inclined to
vertical and well contrasted.

~~Mugil belanak Bleeker~~

Mugil belanak Bleeker, Nat. Tijds.
Ned. Indië, vol. 11, p. 419, 1856
(type locality, Muntok, Banka);
vol. 13, p. 337, 1857 (Batavia).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 427, 1861 (copied). —

Day, Fishes of India, pt. 2, p. 351,
pl. 74, fig. 5, 1876 (Bombay); Fauna
British India, ^{Fishes}, vol. 2, p. 345, 1889.

↑ — Vinciguerra, Ann. Mus. Civ. Stor. Nat.
Genova, ser. 2, vol. 9, p. 180, 1890 (Rangoon).

Java, Madura, Bali). — Towler,
Proc. Acad. Nat. Sci. Philadelphia,
p. 494, fig. 9, August 16, 1905 (Baram,
Borneo). — Seale, Philippine Journ.

— Weber, Nova Guinea, vol. 5, pt. 2, p.
244, 1908 (Moso in Iami Basin, north
New Guinea).

~~Mugil belanak Bleeker~~

Mugil belanak Bleeker, Nat. Tijds.
Ned. Indië, vol. 11, p. 419, 1856
(type locality, Muntok, Bunka);
vol. 13, p. 337, 1857 (Batavia).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 427, 1861 (copied). —

Day, Fishes of India, pt. 2, p. 351,
pl. 74, fig. 5, 1876 (Bombay); Fauna
British India, ^{Fishes,} vol. 2, p. 345, 1889.

— Weber, Zool. Ergebw. Ned. Ost
Indië, vol. 3, p. 451, 1874 (Bunka,
Java, Madura, Bali). — Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
p. 494, fig. 9, August 16, 1905 (Baram,
Borneo). — Seale, Philippine Journ.

95 Sci., vol. 5, no. 4, p. 268, October
1910 (Sandakan). — Tirant,
Serv. Océanogr. Pech. Indo Chine,

... 4 or 5 above and below ...

X call 1130 in lateral line to
caudal base and 10 more on latter;
pores 55 in lateral line to caudal

Analysis of the species.

a¹. Dales. Caudal fin immaculate or with a single black blotch on each lobe in the young, becoming broad black margin with age; body usually with dark spots; 16 to 19 gill rakers on lower branch of first arch; scales 40 to 45 + 4 or 5 in lateral line.

b¹. Caudal slightly emarginate, lobes rounded; anal rays 10; maxillary reaches below middle of eye, or beyond with age. rupestris

b². Caudal more emarginate; anal rays 11 to 13; maxillary not or barely reaches middle of eye. marginatus

a². Moronopsis. Caudal fin with median black band and 2 broad black bands on each lobe; body without dark spots; 24 to 29 gill

p. 171, 1929 (Cochin China).

in seals. We may note that
Monomopsis Gill was proposed with
the genotype Oulex taeniurus Cuvier,
thus the unnecessary Safale Jordan
with the same genotype falls as
an exact synonym.

Mugil bontah (part) Bleeker,
Nat. Tijds. Ned. Indië, vol. 13,
p. 336, 1857 (Batavia); vol. 16,
p. 278, 1858 (diagnosis in key);
Act. Soc. Sci. Ind. Néerl. (Borneo),
vol. 8, p. 49, 1860; Ned. Tijds. Dierk.,
vol. 4, p. 143, 1873 (1874) (Amoy).

Body well elevated. Eyes moderate. Mouth terminal, oblique. Chin moderately prominent. No canines. Preorbital and preopercle edges finely denticulate. Opercle without membranous lobe. Gill rakers 17 to 28 on lower branch of first arch. Scales 40 to 50 in longitudinal series. Lateral line complete. Dorsal and anal fins each with basal scaly sheaths. Dorsal begins well before middle in body length. Caudal emarginate or forked.

Widely distributed in the Indo Pacific. We accept Dulus Cuvier 1829 as different from Dulus Vieillot 1816 in birds, thereby eventuating the family name Dulidae. This case parallels our acceptance of Halichoeres Rüppell as different from Halichoerus Nilsson

Mugil decem-radiatus (not
Günther 1861) Schmeltz, Cat. Mus.
Godeffroy, no. 4, p. 21, 1869 (Kandavu).
— Pöhl, Cat. Mus. Godeffroy, no. 9,
p. 34, 1884 (Kandavu).

Mugil kandavensis Günther,
Journ. Mus. Godeffroy, vol. 6,
pt. 11, p. 215, 1877 (type locality,
Kandavu). — Schmeltz, Cat. Mus.
Godeffroy, no. 7, p. 51, 1879
(Kandavu). — Jordan and Seale,
Bull. Bur. Fisher., vol. 25, p.
217, 1905 (1906) (reference).

ray $2\frac{1}{5}$ to $2\frac{3}{4}$; A. III, 7, I, second spine 4 to $4\frac{1}{5}$, second ray $2\frac{1}{2}$ to $2\frac{4}{5}$; caudal $1\frac{4}{5}$ to 2, hind edge emarginate; least depth of caudal peduncle 4 to $4\frac{1}{8}$; pectoral 2 to $2\frac{1}{4}$; ventral 2 to $2\frac{1}{8}$.

Brown above, whitish below, color of back and lower surface contrasted by pronounced line of demarcation. In young distinct light longitudinal band extends from upper hind eye edge to below soft dorsal, obsolete with age. Fint all brown in adult. In young spinous dorsal dusky and soft dorsal with broad dusky black anterior area, apex white and rest of fin pale. Caudal in young with blackish blotch on each lobe terminally

Mugil tade Forskål

Mugil crenilabis tade Forskål,
descript. animal., pp. 14, 74, 1775
(type locality, Arabia).

Mugil tade Valenciennes, Hist. nat.
Poiss., vol. 11, p. 153, 1836 (Red Sea).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 410, 1861 (reference). —
Klunzinger, ~~Sitzb. Ber. Akad. Wiss.~~
~~Wien, vol. 80, Math. naturw. Kl.,~~
~~vol. 20, p. 828, 1870 (Red Sea).~~
Verh. zool. bot. Ges. Wien, vol. 20,
p. 828, 1870 (Red Sea); Sitzb. Ber.
Akad. Wiss. Wien, Math. naturw.
Kl., vol. 80, pt. 1, p. 394, 1879 (1880)
(Cleveland Bay); Fische Roth. Meer,
p. 133, pl. 10, figs. 3-a, 1884. —

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Depth $3\frac{1}{3}$ to $3\frac{3}{4}$; head 3 to $3\frac{1}{8}$, width $2\frac{2}{3}$ to $2\frac{4}{5}$. Snout $3\frac{7}{8}$ to $4\frac{1}{3}$ in head from snout tip; eye $3\frac{1}{4}$ to $6\frac{1}{8}$, greater than snout or interorbital; maxillary reaches $\frac{3}{5}$ in eye to little beyond with age; expansion $1\frac{1}{6}$ to $2\frac{1}{2}$ in eye, length $2\frac{1}{6}$ to $2\frac{1}{3}$ in head from snout tip; teeth villiform, in bands in jaws, outer laterals scarcely enlarged; interorbital 5 to $5\frac{1}{3}$, flattened, frontal ridges conspicuous; hind preopercle edge minutely serrated and several serrae conspicuously enlarged; 3 spines along lower preopercle edge directed downward; lower opercular spine longest and most posterior. Gill rakers 7 to 9 + 15 to 17, lanceolate, $\frac{3}{5}$ of eye; 3 upper sometimes rudimentary.

Depth, ^{$3\frac{1}{4}$ to} $3\frac{3}{4}$; head ^{to $3\frac{3}{4}$} $3\frac{1}{2}$, width ^{$2\frac{1}{2}$ to $1\frac{2}{3}$} $1\frac{1}{5}$.
Snout ^{$3\frac{3}{8}$ to 4} $3\frac{3}{8}$ in head; eye ^{$3\frac{3}{5}$ to} 4 , little
less, ^{or greater} than snout, ^{$1\frac{1}{5}$ in interorbital} adipose lids
well developed; maxillary about
reaches eye, exposed, length ^{to $4\frac{1}{5}$} 4 , in
head; ^{upper lip width $\frac{1}{4}$ of pupil;} mandible with broad obtuse
angle; interorbital ^{to $2\frac{7}{8}$} $2\frac{1}{2}$, broad,
flat or slightly convex. Gill rakers
 ^{15 to $20 + 38$ to} 62 ?, slender, fine, $\frac{3}{5}$ of gill
filaments, which little less than
orbit.

^{30 to 35} Scales in lateral axial series to
caudal base; ^{to 12} 10 , transversely, ^{18 to} 20 ?
predorsal. Soft vertical fins largely
with fine scales. Axial pectoral
scale $\frac{2}{7}$ of fin. Scales with 5 or 6 basal
radiating striae, edge scalloped, with fringe of
cutaneous flaps; circuli very fine.

11842, ~~23647~~, 23648. Caracaran, Batan Island. June 8, 1909. Length 79 to 154 mm.

6 examples. Cataingan Bay, Masbate Island. April 18, 1908. Length 46 to 83 mm.

24055. Cataingan Bay. April 17, 1908. Length 62 mm.

7982 to 8008, 8497. Catbulogan, Samar. April 16, 1908. Length 84 to 160 mm.

12257. Cuxisigan Island, north Balabac Strait. January 2, 1909. Length 165 mm.

17723 and 17725. Cuyo, Cuyo Island. April 9, 1909. Length 160 to 192 mm.

23493 to 23495, 23074 to 23076. Endeavor Strait, north-west coast of Palawan. December 22, 1908. Length 66 to 108 mm. 15 examples.

to $1\frac{2}{3}$ (2396)

D. IV - I, 8, first spine $1\frac{1}{2}$ in head, first ray $1\frac{1}{3}$, ^{to $1\frac{7}{8}$} A. III, 9, I, third spine ^{3 to} $3\frac{1}{2}$, first ray ^{$1\frac{1}{2}$ to} $1\frac{3}{4}$; least depth of caudal peduncle ^{$1\frac{1}{8}$ to} $2\frac{1}{5}$; pectoral $1\frac{1}{2}$, rays II, 14; ventral rays I, 5, fin ^{$1\frac{2}{5}$ to} $1\frac{1}{2}$ in head; caudal 3 in rest of fish, emarginate behind.

Back and head above dark brown, paler on sides and under surfaces whitish. Fins pale brown. No dark spot at pectoral origin.

Red Sea, Arabia, India, Ceylon, Andamans, Burma, Singapore, Pinang, East Indies, Indo China, Philippines, China, Queensland, Melanesia, Micronesia.

208. Busin Harbor, Burias Island.
March 8, 1909. Length 90 mm.

16776 and 16803. Busin Harbor. March
7, 1909. Length 75 to 95 mm.

7485, 23571, 23574. Busin Harbor.
April 22, 1908. Length 90 to 140 mm.

16411. Cagayan Island, Jolo Sea.
March 31, 1909. Length 203 mm.

14249. Candaraman Island, North Balabac
Strait. January 4, 1909. Length 63 mm.

17068, 23090 to 23092, 24093. Canmahala
Bay, Ragay Gulf, Luzon. March 11, 1909
Length 73 to 132 mm. 6 examples.

15078, 15088, 15090, 15093, 15095, 15097. Cupuluan
Bay, Paybilao Island. February 24, 1909.
Length 61 to 86 mm.

One example. Tuna butan Bay, ⁽²³⁹⁷⁾
Mindanao. February 6, 1908. Length 39 mm.
Scales 34. Pectoral with axillary scale.
Maxillary visible. A. III, I, I.

One example. Pasacao, Pasacao
River, Luzon. March 9, 1909. ~~A~~ Length
133 mm. Adipose cycloid present.
Maxillary exposed. Scales 33. Axillary
pectoral scale $2\frac{3}{4}$ in fin. A. III, I, I.
Pectoral $1\frac{1}{4}$ in head.

Two examples. Ragay River, Ragay
Gulf, Luzon. March 10, 1909. Length 31
to 58 mm. No adipose cycloid. Maxillary
exposed. Scales 33. Axillary pectoral
scale moderate. A. III, I, I.

23534 to 23536, 23875, 23876, 23878.

Tidore Island, south of Ternate. November
25, 1909. Length 53 to 105 mm.

One example. No data. Length 78 mm.

A. N. S. P., one example. Baram.

Mr. William H. Furness 3rd. 1898.

Weitar Inst. Anat. Length 115 mm.

15158 and 16293. Alibijaban Island,
Raga Gulf, Luzon Island. March 6, 1909.
Length 78 to 83 mm.

23491. Balikias Bay, Lubang, southern
Luzon. July 14, 1908. Length 90 mm.

17028. Bisucay Island, near Cuyo, Cuyo
Islands. April 9, 1909. Length 163 mm.

8875. Buang Bay, Talajit Island.
March 15, 1909. Length 145 mm.

14804, 15557 to 15559. Bugsak Island,
Balabac. January 5, 1909. Length 92 to
104 mm.

17849 and 17850. Bumbum Island,
vicinity of Jolo. September 15, 1909.
Length 101 to 103 mm.

{ 7489. Bolalo Bay, Palawan. April 22, 1908. Length 128 mm.
23061, 24095, 24096. Bolalo Bay. December 21, 1908. Length 58 to 92 mm.

2399

Mugil robustus Günther

Mugil robustus Günther, Cat. Fish.
Brit. Mus., vol. 3, p. 432, 1861
(type locality, Madagascar). —
Bleeker, Nederl. Tijds. Dierk., vol.
1, p. 345, 1863 (Madagascar). —
Sauvage, Hist. Nat. Madagascar,
Pois., p. 400, pl. 413, figs. 6-a,
1891 (Madagascar). — Regan,
Ann. Natal Mus., p. 243, 1908
(Kosi Bay). — Boulenger, Cat.
Fresh Water Fish. Africa, vol.
4, p. 92, fig. 54, 92 (Madagascar;
Zululand). — Gilchrist and
Thompson, Ann. Durban Mus.,
vol. 1, no. 4, p. 317, 1917 (reference).
— Barnard, Ann. South Afric. Mus.,
vol. 21, pt. 1, p. 305, June 1925 (Zululand).

22863. Togean Bar, Gulf of
Tomini, Celebes. ^{November?} 1909. Length 130 mm.

19946 and 22684. Gane Road, Gillolo
Island. December 1, 1909. Length 125 to
136 mm.

15353. Hokeno, Formosa. January 29,
1910. Length 183 mm.

— Pellegrin, Mém. Acad. Malgache,
vol. 14, p. 176, fig. 96, 1933 (Madagascar).

Parapriacanthus güntneri (Klunzinger) ¹⁹⁴

Pempherichthys güntneri Klunzinger,
Verh. zool. bot. Gesell. Wien, vol. 21,
1871, p. 470, Red Sea.

Parapriacanthus güntneri Klunzinger,
Fische Rott. Meer., 1884, p. 81, pl. 5,
fig. 4.

Depth 3; head 3. Snout 5 in head
from upper jaw tip; eye $3\frac{1}{8}$, greater
than snout; maxillary reaches opposite
eye center, expansion $1\frac{1}{2}$ in eye, length
 $1\frac{3}{5}$ in head from snout tip; teeth
small, uniform, (shown as) uniserial in
jaws, on vomer and palatines; interorbital
but little elevated. Scales 70 in lateral
line (figure shows about 50). D. $\overline{\text{V}}$, 9,
first ray $1\frac{1}{4}$ in total head; A. $\overline{\text{III}}$, 22
(figure shows 21 branched rays), first
ray 3; caudal $1\frac{1}{4}$, well emarginate;
least depth of caudal peduncle 3;

Depth $4\frac{1}{5}$; head 4, width $1\frac{2}{3}$.

Snout $3\frac{1}{2}$ in head; eye $4\frac{4}{5}$, $1\frac{2}{5}$ in snout, $1\frac{3}{4}$ in interorbital, adipose lids anterior and posterior to eye and not extending on iris; mouth terminally inferior, mandible forming obtuse angle; maxillary exposed, reaches $\frac{7}{8}$ to eye; lower preorbital edge serrate; upper lip rather wide, width $\frac{1}{3}$ of eye; interorbital $2\frac{2}{5}$ in head, low, broad, but slightly convex. Gill rakers $31 + 43$, short, fine, slender, flexible points, $\frac{1}{2}$ of gill filaments, which equal eye.

Scales 35 in lateral axial series to caudal base; 13 transversely between soft dorsal origin and anal; 28 predorsal, of which 18 forward to occiput. Pectoral scaly axillary flap $4\frac{1}{2}$

in fin, ventral flap .2 in fin.
 Soft dorsal with small scales
 anteriorly, caudal and anal
 nearly entirely scaly. Scales with
 7 to 11 basal radiating striae;
 37 to 55 short low apical points,
 with 2 to 6 series transversely;
 circuli fine, basal.

D. IV - I, I, 7, I, second spine
 $1\frac{4}{5}$ in head, first branched ray
 $1\frac{2}{3}$; A. III, 9, I, first branched ray
 $1\frac{7}{8}$; least depth of caudal
 peduncle $2\frac{1}{8}$; pectoral $1\frac{1}{4}$; ventral
 $1\frac{3}{5}$, spine $1\frac{1}{2}$ in fin; caudal $3\frac{2}{5}$
 in rest of fish.

Back dark brown, sides
 and below pale brown, evidently
 whitish. Iris gray. Mandible pale.
 Dorsals and caudal brownish,
 other fins paler to whitish with

slight dusky tinge on pectoral
above and front of anal.
Inside pectoral base with
dark or blackish brown blotch.

Natal, Zululand, Madagascar.

A. N. S. P., one example. Durban,
Natal. H. W. Bell Marley. Length
157 mm.

Mugil georgii Ogilby

Mugil georgii Ogilby, Proc. Linn. Soc. (1898)
 New South Wales, vol. 22, p. 77, 1897,
 (type locality, Estuary of George River).
 — Stead, Edible Fishes New South
 Wales, p. 43, 1908. — Cockerell,
 Mem. Queensland Mus., vol. 2, p.
 53, 1913 (scales). — McCulloch,
 Rec. Austral. Mus., vol. 13, no. 4,
 p. 129, pl. 22, fig. 1 (otype of
Mugil nortoni?; Port Hacking
 and Port Stephens, New South
 Wales). — McCulloch and Whitley,
 Mem. Queensland Mus., vol. 8,
 pt. 2, p. 141, July 7, 1925 (reference).
 — McCulloch, Mem. Austral. Mus.,
 vol. 5, pt. 1, p. 114, June 29, 1929
 (reference).

(Gambounga). — Fowler, Proc. Acad. Nat. Sci. Phila., 1907, p. 264 (name only). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 254 (Mindoro Island). — Gilchrist and Thompson, Ann. South Afr. Mus., vol. 6, 1908-10, p. 214 (Umbilo River tidal, Durban). — Regan, Proc. Zool. Soc. London, 1913, p. 375 (Indo Pacific to Tuamotus). — Beaufort, Bijdr. Dierk. Amsterdam, 1913, p. 110 (Kajeli, Borneo). — Boulenger, Cat. Fresh Water Fishes Africa, vol. 3, 1915, p. 93, fig. 76 (Zanzibar, Mauritius, Rodriguez). — Gilchrist and Thompson, Ann. Durban Mus., vol. 1, 1917, p. 321 (compiled). — Jordan and Hubbs, Mem. Carnegie Mus., vol. 10, no. 2, 1925, p. 232 (Chatan, Ryukyu). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 8 (Guam), p. 32 (Hawaii), p. 37 (Tahiti).

Mugil nortoni Ogilby, Ann.
Queensland Mus., no. 9, p. 22,
1908 (type locality, "Eastern
Australia" [?= Queensland]).

⁺ Gesell., vol. 21, 1889, p. 500 (Kokotoni, Zanzibar). — Sanvage, Hist. Nat. Madagascar, Poiss., 1891, p. 150, pl. 41 B, fig. 3. — Weber, Zool. Forschungen. Austral. Seemon., vol. 5, 1895, p. 262 (Amboina, fresh water). — Fowler, Proc. Acad. Nat. Sci. Phila., 1906, p. 512 (Samoa and Tahiti).

Boules rupestris Guichenot, Notes Ile Réunion, vol. 2, 1862, p. 24.

Kuhlia rupestris Boulenger, Cat. Fishes Brit. Mus., vol. 1, 1895, p. 36 (Zanzibar, Mauritius, Rodriguez, Palau Islands, Ponapé, Amboina, Solomons, New Hebrides, Fiji, Tonga). — Pfeffer, Thierw. Ost Afr., Fische, 1896, p. 3, fig. — Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 255 (Vaisigano River above Tipia). — Seale and Bean, Proc. U. S. Nat. Mus., vol. 30, 1907, p. 242.

Depth $3\frac{2}{5}$; head 4. Snout 6 in head; eye $3\frac{3}{5}$, greatly exceeds snout, $1\frac{2}{5}$ in interorbital, with broad adipose lids; maxillary concealed, reaches eye; very few fine ciliae on premaxillaries, none on mandible; upper lip broad, width about $2\frac{1}{5}$ in eye, vertical; mouth seen below would form obtuse angle; interorbital $2\frac{4}{5}$ in head, low; preorbital slightly notched, denticulated.

Scales 31 or 32 in lateral series to caudal base; 12 transversely. Caudal and pectoral bases completely scaly, also soft dorsal and anal bases scaly. Pectoral with axillary scale $\frac{1}{3}$ of fin length. Scales obscurely ciliated, nearly cycloid, ctenoid on breast.

D. IV - I, 8, first spine $1\frac{7}{8}$ in head, first branched ray 2; A. III, 9, first branched ray $1\frac{7}{8}$; least depth of caudal peduncle $1\frac{4}{5}$; pectoral I, rays I, 15; ventral rays I, 5, fin $1\frac{1}{3}$ in head; caudal $3\frac{4}{5}$ in rest of fish, hind edge concave.

Brownish, paler below. Blackish spot at pectoral origin. Length 23 mm. (McCulloch.)

New South Wales, Queensland.

Mugil tadopsis Ogilby

Mugil tadopsis Ogilby, Ann.
Queensland Mus., No. 9, ^{pt. 1, (4)} p. 27, 1908
(type locality, Moreton Bay, Queensland).
— McCulloch, Rec. Austral. Mus.,
vol. 13, no. 4, p. 127, pl. 22, fig. 2,
1921 (type; Burdekin and
Endeavour Rivers). — McCulloch
and Whitley, Mem. Australian
Mus., vol. 8, pt. 2, p. 141, July 7,
1925 (reference). — McCulloch,
Mem. Austral. Mus., vol. 5, pt. 1, p.
116, June 29, 1929 (reference).

and each blotch well separated with distinct whitish edges.

Japan and Philippines, from which latter locality we have no examples. The above description from Japanese examples in the U. S. National Museum received from Mr. H. M. Smith and the Japanese Government, 153 to 392 mm.

Depth $3\frac{1}{2}$ to $3\frac{3}{5}$; head $4\frac{2}{5}$

Snout $3\frac{7}{8}$ to $4\frac{1}{4}$ in head; eye $3\frac{7}{8}$ to $4\frac{1}{4}$, subequal with snout, adipose lids broad; maxillary exposed, extends behind hind nostril; mouth as seen below would form obtuse angle; upper lip thin, width $\frac{2}{3}$ pupil; each jaw with single row of minute cilia; interorbital 2 to $2\frac{1}{5}$ in head; preorbital with front edge concave, denticulate below. Lower gill rakers 50, $\frac{2}{7}$ of eye.

Scales 32 or 33 in lateral series; 11 transversely, 20 predorsal. Pectoral with vestigial axillary scale. Scales on cheeks and lower surfaces finely ciliated.

D. VIII I, 8, spinous dorsal origin above tenth lateral scale, second spine $1\frac{1}{2}$ to $1\frac{3}{5}$ in head, soft

dorsal origin over twentieth lateral scale, higher than spinous dorsal; A. III, 9, origin below nineteenth lateral scale; caudal deeply emarginate, branched rays $1\frac{1}{2}$, 6 to $6\frac{1}{4}$ in body; least depth of caudal peduncle 7 to $7\frac{1}{4}$; pectoral rays 12, reaches seventh lateral scale, $4\frac{3}{5}$ to 5 in body; ventral $1\frac{2}{5}$ to $1\frac{1}{2}$ in head.

Dark blue above, silvery washed with bronze on sides, pearl white below. Each scale of back and sides with golden brown median bar, forming together longitudinal bands. Opercle with cloudy spot. Dorsal and caudal dull greenish. Obscure black blotch in pectoral axil. Iris lead blue, with narrow gold rim above. Length 325 mm. (Ogilby.)
Queensland.

Mugil carinatus Valenciennes

Mugil carinatus (Ehrenberg)
Valenciennes, Hist. Nat. Poiss.,
 vol. 11, p. 148, 1836 (type locality,
 Red Sea; Seychelles; Guam).
 — Günther, Cat. Fish. Brit. Mus.,
 vol. 3, p. 410, 1861 (reference). —
Day, Fishes of Malabar, p. 145,
 1865; Fishes of India, pt. 2, p.
 349, pl. 74, fig. 2, 1876 (Bombay);
 Suppl., p. 800, 1888; Fauna
 British India, Fishes, vol. 2,
 p. 344, 1889. — Sauvage, Hist.
 Nat. Madagascar, Poiss., p. 396,
 pl. 42, figs. 1-a, 1891. — Oshima,
 Ann. Carnegie Mus., vol. 12, nos.
 2-4, p. 272, 1919 (Shimo-Tanumi
 River; Taihoku); vol. 13, nos. 3-4,
 p. 247, April 25, 1922 (Tavien,

Ambassis wolffi Bleeker.

Ambassis wolffi Bleeker, Nat. Tijds.
Ned. Indië, vol. 1, 1850, pp. 3, 9.

Bandjermassing, Borneo. — Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p.
226 (copied). — Bleeker, Atlas Ichth.
Ind. Néerl., vol. 8, 1876-77, p. 133, pl.
(47) 325, fig. 2 (Sumatra, Borneo,
Celebes). — Fowler, Proc. Acad. Nat.
Sci. Phila., 1905, p. 500 (Baram, Borneo).

Ambassis wolffii Elera, Cat. Fauna
Filip., 1895, p. 469 (Samara, Borongan).

Ambassis robustus (Schlegel) Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p. 222.
Borneo. — Steindachner, Arch. Zool.

anat. Zool., vol. 3, 1864, p. 197, pl. 4,
fig. 1 (Celebes). — Elera, Cat. Fauna
Filip., 1895, p. 467 (Samara and Cebu).

Ujvon, Shimo-Tamusi River,
Taihoku); Annot. Zool. Japon.,
vol. 11, no. 1, p. 19, March 31, 1926
(Hainan, Hainan). — Wu, Contrib.
Biol. Lab. Sci. Soc. China, vol.
5, no. 4, p. 79, fig. 63, 1929 (Amoy).
— Chu, Biol. Bull. St. John's
Univ., no. 1, p. 104, January 1931
(reference). — Pellegrin, Mém. Acad. Malgache,
vol. 14, p. 177, 1933 (Madagascar).
(Fowler, Journ. Bombay Nat. Hist. Soc., vol. 30,
no. 2, p. 315, January 25, 1925 (Calicut)).

Mugil blunzingeri Day, Proc. Zool.
Soc. London, 1888, p. 264 (~~typo~~
~~on Mugil carinatus~~ on Mugil carinatus Day 1876).
Fishes of India, Suppl., p. 800,
1888 (reference); Fauna British
India, Fishes, vol. 2, p. 343,
1889.

Whitleyia new subgenus

Type Amibassia wolffii Bleeker.

Scales small, about 40 to 46 in lateral line to caudal base. Cheek with 7 rows of scales. Second erect dorsal and anal spines enlarged and prominent, former higher than soft dorsal.

(For Mr. Gilbert T. Whitley,
Zoologist of the Australian
Museum.)

2413

Depth $3\frac{7}{8}$; head $3\frac{1}{2}$, width $1\frac{3}{4}$.

Snout 4 to $4\frac{1}{5}$ in head; eye $4\frac{1}{5}$ to $4\frac{2}{3}$, adipose lid moderate or covers $\frac{1}{4}$ to $\frac{1}{3}$ of iris; mouth inferior, angle obtuse, width $3\frac{1}{5}$ to 4 in head; maxillary reaches eye; very narrow, exposed; upper lip moderate; interorbital $2\frac{1}{4}$ to $2\frac{2}{5}$ in head, broadly convex; preorbital narrow, edge finely serrated. Gill rakers $26 + 40$, finely lanceolate, $1\frac{2}{3}$ in eye, equal gill filaments.

Scales 37 or 38 in lateral axial series to caudal base; 11 or 12 transversely, 22 to 24 predorsal. Axillary pectoral scale 3 in fin. Soft vertical fins finely scaled. Scales with 5 or 6 basal radiating striae; 30 to 33 apical

lobules, with as many radiating weak striae; circuli fine.

D. IV - I, 8, I, first spine 2 in head, first branched ray 2; A. III, 9, third spine $3\frac{1}{3}$ to 4, first branched ray 2; caudal 1, deeply emarginate, lobes pointed; least depth of caudal peduncle $2\frac{1}{3}$ to $2\frac{1}{2}$; pectoral $1\frac{1}{5}$ to $1\frac{1}{4}$, reaches slightly beyond spinous dorsal origin; ventral $1\frac{2}{3}$ to $1\frac{3}{4}$.

Back brownish, pale to whitish below. Fins paler, narrow dusky edges on ends of dorsals and caudal behind. Slight slaty blotch at bases of uppermost pectoral rays, also inner axillary bases, at least of upper, dusky.

A. N. S. P., three examples. Calicut.
1922. James Hornell. Length
126 to 134 mm.

13671. Limbe Strait. November 10, 1909.
Length 95 mm.

14418. Talisse Island, north of Celebes.
November 9, 1909. Length 116 mm.

[20670. Sadaa, Gulf of Tomini, Celebes.
November 17, 1909. Length 76 mm.

23859. Togian Bay, Togian Island,
Gulf of Tomini, Celebes. November 19, 1909.
Length 87 mm.

9711. Una Una Road, Binang Unang
Island, Gulf of Tomini, Celebes.
November 17, 1909. Length 186 mm.

23609 to 23612. Gane Road, Gillolo
Island. December 1, 1909. Length 73 to
113 mm.

Muyil sordidus Duncker and Mohr

Muyil sordidus Duncker and Mohr,
 Mitteil. Naturh. Mus. Hamburg,
 vol. 42, p. 132, fig. 6 (dorsal fins),
 1926 (type locality, Lieblische
 Island and Mowe Harbor, New
 Guinea; Vabai, Admiralty
 Islands; Longemak Bay, New-
 Guinea). — Fowler, Mem. Bishop
 Mus., vol. 10, p. 123, 1928 (compiled).

maxillary scaled, 5 rows across expansion. Scales with 7 or 8 basal radiating striae; apical denticles 24 to 65 in single row; circuli fine.

D. VII or IX - I, 10, I, fourth spine $2\frac{1}{2}$ to $3\frac{1}{10}$ in total head length; first branched ray $2\frac{3}{5}$ to $2\frac{4}{5}$; A. III, 7, I, third spine $2\frac{7}{8}$ to 3, first ray $2\frac{2}{3}$ to $2\frac{7}{8}$; caudal $1\frac{2}{5}$ to $1\frac{1}{2}$, deeply forked, slender lobes sharply pointed; least depth of caudal peduncle $3\frac{4}{5}$ to $4\frac{2}{5}$; pectoral $1\frac{1}{2}$; ventral 2 to $2\frac{1}{2}$.

Back brown, sides and below silvery white. Iris silvery white. Fins all pale, slightly dusky on spinous dorsal terminally.

Japan, Formosa, China, Philippines.

Depth 5 in total; head 4. Eye equals snout, adipose lids broader in front than behind; maxillary scarcely visible; lips narrow, without papillae; no teeth; preorbital strongly denticulate.

Scales 39 or 40 in lateral series; 12 transversely. First dorsal and paired fins with beveled scales. Second dorsal, anal, caudal and pectoral bases scaled.

D. IV - I, 8 to 10, first dorsal origin midway between front eye edge and caudal base, second dorsal inserted over middle of anal; A. III, 9; caudal well forked; pectoral rays 17 or 18; ventral rays 6.

Back brown, sides and belly silvery. First dorsal with black

pigment. Second dorsal with black pigment on membranes, lobe reaches half fin length. Caudal lightly pigmented in terminal half, base dark. Pectoral with dark spot at upper axil. Length 46 mm.
(Dencker and Mohr.)

East Indies, Melanesia.

Mugil affinis Günther

Mugil affinis, Günther, Cat. Fish.
 Brit. Mus., vol. 3, p. 433, text fig.
 (head below), 1861 (type locality,
 Amoy, China). — Bleeker, Ned.
 Tijds. Dierk., vol. 4, p. 143, 1873
 (1874) (reference). — Martens,
 Preuss. Exped. Ost Asien, vol. 1,
 p. 395, 1876, Shanghai. — Thunberg,
 Cat. Fauna Filipinas, vol. 1, p. 537, 1815 (Siquin, Manila, Puerto). —
Reeves, Journ. Tan Tac, Res.
 Inst., vol. 5, no. 1, p. 8, 1927.
 (reference). — Wu, Contrib. Biol.
 Lab. Sci. Soc. China, vol. 5, no. 4, p.
 81, 1929 (Amoy). — Schmidt, Trans.
 Pac. Comm. Acad. Sci. U. S. S. R.,
 vol. 1, p. 27, fig. 1 (head), 1930 (Itoman,
 Okinawa). — Chu, Biol. Bull. St.
 John's Univ., no. 1, p. 103, January 1931
 (reference).

2 examples. Laguna de Bay.

June 21, 1908. Length 70 to 76 mm.

5516, 5518, 5520 to 5524, 5526, 5527,
5529, 5534 to 5538. Malabon market.
August 8, 1908. Length 50 to 76 mm.
18 examples.

30 examples. Malampaya River,
Palawan. December 26, 1908. Length 31 to
72 mm.

1 example. Balochin Harbor, Linapacan
Island, Linapacan Strait. December 18,
1908. Length 31 mm.

9075 to 9078, 13683, 13684. Manila market.
June 24, 1908. Length 83 to 105 mm.

11 examples. Iato River, Luzon. June 17,
1909. Length 22 to 31 mm.

7 examples. Iato River. June 18, 1909.
Length 25 to 45 mm.

3 examples. Paluan River, Mindoro.
December 11, 1908. Length 43 to 70 mm.

Mugil affinis Wu, Contrib. Biol.
Lab. Sci. Soc. China, vol. 5, no. 4,
fig. 64, 1929 (error).

5 examples. Alimango River,
Alimango Bay, Burias Island.

March 5, 1909. Length 70 to 92 mm.

15 examples. Camp Overton, Iligan Bay,
Mindanao. August 6, 1909. Length 63 to
83 mm.

12831. Cavite and San Roque markets.
June 27, 1908. Length 92 mm.

4 examples. Chase Head, Palawan Island.
December 22, 1908. Length 30 to 58 mm.

3 examples. Sampalut, Malabon. August 10, 1908. Length 40 to 51 mm.

32 examples. Kumara River. February
25, 1909. Length 50 to 82 mm.

1 example. Estero, Sablayan, Mindoro.
December 13, 1908. Length 42 mm.

5 examples. Guimaras Island, vicinity
Buena Vista, Iloilo Strait. January 14,
1909. Length 55 to 75 mm.

7751. Jolo market, Jolo. February 12,
1908. Length 65 mm.

2421

Depth $5\frac{1}{3}$; head 5. Snout long as eye, moderately broad; ^{adipose eyelids well developed;} somewhat pointed; mouth angle as seen below obtuse, mouth cleft more than twice broad as deep; ^{upper lip rather wide;} maxillary exposed at end; interorbital $2\frac{3}{4}$ in head, slightly convex; preorbital emarginate, denticulated.

Scales 38 in lateral series; 13 transversely, 24 predorsal scales forward to snout. ^{soft dorsal} ~~caudal~~ not scaly. Pectoral with very short obtuse scale in axil.

D. IV - I, 8, spinous fin origin little nearer snout than caudal base, above tenth lateral scale, front spines over 2 in head, soft dorsal origin over 24th lateral scale or first soft anal ray, high as spinous dorsal.

2422

A. III, 9, high as but rather longer
than III soft dorsal; caudal little
over 6 in total, short, emarginate;
least depth of caudal peduncle
2 in head; pectoral inserted
above middle in body depth,
much shorter than head, reaches
eighth lateral scale; ventral
origin midway between pectoral
origin and first dorsal origin.

Greenish, shining silvery.
Length not given. (Günther.)
China.

Mugil speigleri Bleeker

Mugil speigleri Bleeker, Nat. Tijds.
Ned. Indië, vol. 16, p. 196, 1858
(type locality, Sinkawang, Borneo),
p. 279 (East Indies; diagnosis in key,
p. 386 (Batavia); Act. Soc. Sci.
Ind. Néerl., vol. 5, no. 7, p. 2, 1858-
59 (Sinkawang); vol. 6 (Borneo), p.
58, 1860 (Borneo).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 435, 1860 (copied). — Day,
Fishes of India, pt. 2, p. 348, pl.
74, fig. 1, 1876 (Bombay); Fauna
British India, vol. 2, p. 342, 1889.

— Duncker, Mitteil. Naturh. Mus.
Hamburg, vol. 21, p. 166, 1903 (1904)
(Klang, Kuala Lumpur). — Zugmayer,
Abhandl. Kon. Bayer. Akad. Wiss.,
vol. 26, pt. 6, p. 19, 1913 (Baluchistan).
Math. - physik. Kl.,

2785 [D. 5260]. Balanya Point, h.
 28° W., 7.20 miles ($12^{\circ}25'35''$ h., $121^{\circ}31'35''$ E.), off southeastern Mindoro.
 In 234 fathoms. June 3, 1908. Length
 174 mm.

24 examples [D. 5353]. Cape Melville
 Light, 5.85° E., 16.8 miles ($7^{\circ}50'45''$
 N., $116^{\circ}43'15''$ E.), Palabac Strait.
 In 148 fathoms. January 1, 1909.
 Length 65 to 78 mm.

2858 to 2861 [D. 5403]. Capitanillo
 Island. Light, 3.46° W., 15.7 miles
 ($11^{\circ}10'$ N., $124^{\circ}17'15''$ E.), between Leyte
 and Cebu. In 182 fathoms. March
 16, 1909. Length 137 to 161 mm.

2669 [D. 5272]. Corregidor Light,
 N. 26° E., 25.50 miles (14° N., $120^{\circ}22'30''$
 E.), China Sea, vicinity southern Luzon.
 In 118 fathoms. July 14, 1908. Length
 82 mm.

- Duncker and Mohr, Mitteil. naturh. Mus. Hamburg, vol. 42, p. 131, 1926 (Liebliche Island, New Pomerania). — Fowler, Mem. Bishop Mus., vol. 10, p. 123, 1928 (compiled).
- Weber and Beaufort, Fishes Indo Austral. Archip., vol. 4, p. 241, 1922 (Java Sea). — Barnard, Ann. South Afric. Mus., vol. 21, pt. 1, p. 303, June 1925 (Delagoa Bay).

Mugil axillaris (not Valenciennes)
Kner, Reise Novara, Fische, p. 227, 1865.

Mugil suppositus (not Günther)
Day, Fishes of Malabar, p. 143, 1865.

16 examples [D. 5273]. Corregidor Light, N. 27° E., 27.25 miles ($13^{\circ}58'45''$ N., $120^{\circ}21'35''$ E.), China Sea, vicinity southern Luzon. In 114 fathoms.

July 14, 1908. Length 37 to 78 mm.

10129, 10130, 10248 [D. 5501]. Macabalan Point Light, S. 35° E., 8.2 miles ($8^{\circ}37'37''$ N., $124^{\circ}35'$ E.), northern Mindanao. In 214 fathoms. August 4, 1909. Length 164 to 238 mm. 10 examples.

10131, 10195 [D. 5502]. Macabalan Point Light, S. 35° E., 8.2 miles ($8^{\circ}37'37''$ N., $124^{\circ}35'$ E.), northern Mindanao. In 214 fathoms. August 4, 1909. Length 178 to 210 mm. 8 examples.

4238 and 4239 [D. 5503]. Macabalan Point Light, S. 31° E., 6.6 miles ($8^{\circ}36'26''$ N., $124^{\circ}36'08''$ E.), northern Mindanao. In 226 fathoms. August 4, 1909. Length 185 to 196 mm.

2425

Depth $3\frac{3}{4}$; head $3\frac{3}{4}$, ^{width $1\frac{1}{2}$.} Snout $4\frac{3}{4}$ in head; eye $3\frac{4}{5}$, greater than snout, $1\frac{3}{4}$ in interorbital, with broad adipose lids; maxillary exposed at end; upper lip rather thick, oblique, forms part of snout end; mandibles meet at acute angle; teeth minute, few, below; interorbital 2 in head, rather convex; preorbital curved, not emarginate, finely denticulate.

Scales 40 to 42 in lateral series; 11 or 12 transversely, 22 predorsal forward to snout. Soft dorsal, ^{anal and caudal} covered with fine scales, ^{basally} Pectoral with long pointed axillary scale. Scales cycloid, rounded posteriorly.

D. IV - I, 8, second spine $1\frac{4}{5}$ in head, first branched ray $1\frac{7}{8}$; A. III, 9, first branched ray $1\frac{2}{3}$.

2426

least depth of caudal peduncle $2\frac{1}{4}$;
pectoral $1\frac{1}{4}$, rays 16; ventral
rays I, 5, fin $1\frac{3}{4}$ in head; caudal
 $3\frac{1}{2}$ in rest of fish, emarginate
behind.

Gray along back, lower two
thirds of body silvery. Sides of
head golden. Both dorsal tips
blackish. Caudal end gray.
Dark spot at pectoral origin.
Length 144 mm. (Day.)
Portuguese East Africa,
India, East Indies, Malaya,
Baluchistan, Melanesia. Weber
and Beaufort give length as
225 mm.

2427

lugil oshimai new species

Mugil cunnnesius (not Valenciennes)

Cantor, Journ. Asiatic Soc.

Bengal, vol. 18, pt. 2, p. 1082, 1849

(1850) (Sea of Pinang; Malayan

Peninsula; Singapore). — Bleeker,

Nat. Tijds. Ned. Indië, vol. 3, p.

454, 1854 (part); Act. Soc. Sci.

Ind. Néerl., vol. 8 (Sumatra), p.

8, 1860 (part). — Günther, Cat.

Fish. Brit. Mus., vol. 3, p. 434, 1861

(Malayan Peninsula material). —

Day, Fishes of India, pt. 2, p. 349,

1876. — Klunzinger, Fische Roth.

Meer., p. 132, 1884 (part). — Day,

Fauna British India, vol. 2, p. 342,

1889 (part). — Ogilby, Ann. Queensland

Mus., no. 9, pt. 1, p. 26, 1908 (compiled).

— McCulloch, Mem. Austral. Mus., vol. 5,

pt. 1, p. 115, June 29, 1929 (reference).

Malgache, vol. 14, p. 173, 1933 (note in footnote).

Mugil cunnnesius (not Valenciennes)

Cantor, Journ. Asiatic Soc.

Bengal, vol. 18, pt. 2, p. 1082, 1849

(1850) (Sea of Pinang; Malayan

Peninsula; Singapore). — Bleeker,

Nat. Tijds. Ned. Indië, vol. 3, p.

454, 1854 (part); Act. Soc. Sci.

Ind. Néerl., vol. 8 (Sumatra), p.

8, 1860 (part). — Günther, Cat.

Fish. Brit. Mus., vol. 3, p. 434, 1861

(Malayan Peninsula material). —

Day, Fishes of India, pt. 2, p. 349,

1876. — Klunzinger, Fische Roth.

Meer., p. 132, 1884 (part). — Day,

Fauna British India, vol. 2, p. 342,

1889 (part). — Ogilby, Ann. Queensland

Mus., no. 9, pt. 1, p. 26, 1908 (compiled).

— Weber and Beaufort, Fish. Indo

Austral. Archip., vol. 4, p. 242, 1922

(compiled). — Pellegrin, Mém. Acad.

Malgache, vol. 14, p. 173, 1933 (note in footnote).

(No. 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917

at first then basal on most of rays
soft fin above with 5 or 6 rather
variable rows of dark spots.

Caudal with some small dark or
blackish spots on upper basal half
and median dark streaks back over
median rays. Anal with 5 dark
basal blotches. Pectoral gray
ventral pale gray or whitish
with most of short rays dark.

A. N. S. P., no. 60234. Kratt,
South east Siam. December 1933.

Length 54 mm. Type.

A. N. S. P., nos. 60235 to 60238,
paratypes, same data. Length 29
to 50 mm. (latter with broken tail)

Closely related to Trichopsis
vittatus (Valenciennes), but with
more anal spines, or 8 compared
with 6 or 7, and different coloration.
All my examples have the thin

Depth 4; head 4. Snout 5 in head; eye 5, 2 in postorbital, with adipose lid posteriorly; maxillary exposed posteriorly; lips thin; interorbital $2\frac{1}{2}$ in head, very slightly convex; preorbital with front edge nearly straight, neither toothed nor notched.

Scales 42 or 43 in lateral series; 13 transversely, ^{22 predorsal forward to snout.} Vertical fins without scales. Pectoral with long axillary scale, nearly half length of fin.

D. IV - I, 8, spinous dorsal origin at twelfth lateral scale or nearer snout tip than caudal base, first spines less than 2 in head, second dorsal origin at 25th lateral scale or third anal ray; A. III, 9; caudal slightly emarginate; pectoral reaches

first dorsal, much shorter than head; least depth of caudal peduncle less than 2 in head.

Bluish green above, silvery below. Dorsal and caudal with indistinct blackish margins.

Sometimes black spot superiorly at pectoral base. Length 162 mm.
(Weber and Beaufort.)

Red Sea, Pinang, India,
Malay Peninsula, East Indies,
Tonkin.

2431

Genus Liza Jordan and Swain

Liza Jordan and Swain, Proc. U.S.
Nat. Mus., vol. 7, p. 261, 1884. (Type
Mugil capito Cuvier, orthotypic.)

Ellochelon Whitley, Austral. Zoologist,
vol. 6, pt. 3, p. 7, August 1930.
(Type Mugil vaigiensis Duoy and
Gaimard, orthotypic.)

Body oblong, more or less compressed. Eye rather large, lateral, eyelids free, without adipose formation and not extending an iris, so eye always exposed. Mouth more or less transverse, terminal or subinferior. Upper lip moderate. Jaws with one or few series of short, flexible ciliiform teeth. No teeth on palate. Preorbital more or less serrate. Stomach gizzard like. Scales large, cycloid. Anal spines.

Greatly like Mugil, but distinguished ^{by} the exposed eyes without gelatinous membranes.

Analysis of Species

2433

- a.¹ Preorbital without notch on front edge.
- b.¹ Lateral scales 24 to 27.
- c.¹ Fins grayish; anal rays 9. oligolepis.
- c.² Fins black, especially pectoral; anal rays 8 or 9. Twaigiensis.
- b.² Lateral scales 30 to 40 (rarely 43).
- d.¹ Anal rays 8 (varies 9 in Cascasia).
- e.¹ Pectoral shorter than head.
- f.¹ Predorsal scales 16; pectoral with axillary scale. Cascasia.
- f.² Predorsal scales 21. suppositus.
- f.³ Predorsal scales 23 to 33; no axillary pectoral scale. ramada.
- e.² Pectoral longer than head; predorsal scales 21; pectoral with axillary scale. delicatus.
- d.² Anal rays 9 (9 to 11 in atherinoides).
- g.¹ Pectoral with dark spot at origin, also with axillary scale.
- h.¹ Lateral scales 31 to 36.
- i.¹ Lateral scales 31 to 33. buchanani.
- i.² Lateral scales 34. olivaceus.

- ²⁴³⁴
i.³ Lateral scales 36. amarulus.
h.² Lateral scales 40. splendens.
g.² Pectoral without dark spot at origin.
f.¹ Pectoral less than head.
h.¹ Pectoral with axillary scale.
l.¹ Pectoral length 7 in entire fish.
broussonnetii.
l.² Pectoral length 5 in entire fish.
seheli.
h.² Pectoral without axillary scale.
m.¹ Predorsal scales 13. Thomelli.
m.² Predorsal scales 19 to 25.
n.¹ Spinous anal below last
 third of depressed spinous
 dorsal. atherinoides.
n.² Spinous anal well behind
 depressed spinous dorsal,
 opposite soft dorsal origin.
macrolepis.
m.³ Predorsal scales 25 to 37.
saliens.
f.² Pectoral long as head.
o.¹ Lateral scales 30. alatus.
o.² Lateral scales 36. ramsayi.

d.³ Anal rays 10.

2435

p.¹ Lateral scales 30; no
pectoral axillary scale.
cebamensis.

p.² Lateral scales 34.
convexus.

p.³ Lateral scales 35 to 38;
no pectoral axillary scale.
argenteus.

p.⁴ Lateral scales 39 to 40;
pectoral with axillary scale.
australis.

b.³ Lateral scales 42 to 46; no pectoral
axillary scale.

g.¹ Depth $3\frac{7}{8}$. hamiltoni.

g.² Depth $4\frac{3}{5}$ to $4\frac{3}{4}$.
auratus.

a.² Preorbital with deep notch; lateral
scales 32 or 33; no pectoral axillary
scale; anal rays 9. joloensis.

2436

Mugil oligolepis Bleeker

Mugil oligolepis Bleeker, Nat. Tijds.
Ned. Indië, vol. 16, p. 275, 1858
type locality, East Indies; diagnosis
in key, p. 434 (Soengidoeri,
Borneo); Act. Soc. Sci. Ind. Néerl.
(Borneo), vol. 6, p. 40, 1860 (Borneo).

— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 449, 1861 (copied). — Day,
Fishes of India, pt. 2, p. 358, pl.
76, fig. 2, 1876; Fauna British
India, Fishes, vol. 2, p. 355, 1889.

— Weber, Zool. Ergebn. Ned. Ost
Ind., vol. 3, p. 451, 1894 (Borneo;
Sumbawa). — Duncker, Mitteil.
naturh. Mus. Hamburg, vol. 21, p.

166, 1903 (1904) (Iruar River). —
~~Fauna Brit. Ind. Néerl. Sci. Philadelphia, vol. 17, p. 291, 1905 (Kalonga Bay).~~
— Savant, Verw. Ocean. Tech. Indo
China, p. 171, 1929 (Cochin-China;

Depth $2\frac{2}{3}$ to $3\frac{1}{8}$; head $2\frac{2}{3}$ to $2\frac{3}{4}$, width $2\frac{1}{3}$ to $2\frac{4}{5}$. Snout $3\frac{2}{5}$ to $3\frac{3}{4}$ in head from snout tip; eye $4\frac{1}{10}$ to $5\frac{1}{8}$, $1\frac{1}{10}$ to $1\frac{1}{2}$ in snout, greater than interorbital; maxillary reaches $\frac{3}{5}$ to $\frac{2}{3}$ in eye, expansion $1\frac{2}{5}$ to $1\frac{3}{4}$, length $2\frac{1}{5}$ to $2\frac{2}{5}$ in head from snout tip; teeth villiform, in bands in jaws, on vomer, palatines and tongue; interorbital $6\frac{1}{8}$ to $6\frac{3}{4}$, convex; hind preopercle edge denticulate, with strong spine at angle, lower edge entire. Gill rakers 7 + 13, lanceolate, $1\frac{2}{3}$ in eye; 5 upper and 6 lower rudimentary.

Scales 43 to 46 in lateral line to caudal base and 13 to 17 more on latter, 5 above, 7 below, 23 or 24 predorsal, 9 or 10 rows across cheek to preopercle angle; fin bases broadly with fine scales; maxillary naked,

- Regan, Trans. Linn. Soc. London, ser. 2, vol. 12, Zool., pt. 3, p. 254, May 1908 (Praslin, Seychelles).
- Weber and Beaufort, Fish. Indo Austral. Archip., vol. 4, p. 245, 1922 (East Indies). — Vinciguerra, Ann. Mus. Civ. Stor. Nat. Genova, ser. 3, vol. 10, p. 397, 1921-26 (Sarawak).
- Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 77, p. 209, 1925 (Delagoa Bay).
- Barnard, Ann. South Afric. Mus., vol. 21, p. 1023, October 1927 (note).
- Girant, Serv. Océan. Pech. Indo Chine, p. 171, 1929 (Cochin China; Saigon).
- Chevey, Inst. Océan. Indo Chine, 19^e note, p. 20, August 25, 1932 (Cochin China).
- Pellegrin, Mém. Acad. Malgache, vol. 14, p. 181, 1933 (compiled).

9 or 10 above, 16 or 17 below, 40 to 45
 predorsal forward opposite front
 eye edge, 7 or 8 rows on cheek to
 preopercle ridge though none on flange.
 Scales with 7 to 11 basal radiating
 striae; 80 to 103 short weak apical
 denticles, with 12 to 12 transverse
 series of basal elements; circuli very
 fine.

D. XII, 10, I, fourth spine 2 to 2 $\frac{1}{2}$
 in head length, third ray 2 $\frac{2}{3}$ to 3;
 A. III, 8, I, third spine 2 $\frac{4}{5}$ to 3, first
 ray 3 $\frac{1}{5}$ to 3 $\frac{1}{3}$; caudal 2 $\frac{3}{4}$ to 3 in
 rest of body, deeply forked, ^{pectoral 2 $\frac{3}{4}$ to 3;} least
 depth of caudal peduncle 2 $\frac{7}{8}$ to 3

~~Saigon). — Chevey, Inst. Océan.~~
~~Indo Chine, 17^e note, p. 20, August~~
~~25, 1932 (Cochin China).~~

Liza oligolepis Fowler, Proc. Acad.
Nat. Sci. Philadelphia, vol. , p.
496, fig. 10, 1905 (Baram, Borneo).
— Jordan and Richardson, Bull.
Bur. Fisher., vol. 27, p. 244, 1907
(1908) (Iloilo).

Mugil dussumieri (not Valenciennes)
Bleeker, Journ. Ind. Archip., vol. 2,
p. (633) 637, 1848 (Bima, Sumbawa).

Mugil macrolepis (not Küppell)
Bleeker, Nat. Tijds. Ned. Indië, vol.
3, p. (409) 422, 1852 (type locality,
Pamangbut, Borneo; Sampit) Lax in
new species I.

Psammoperca datnioides Richardson,
Ichth. Voy. Erebus and Terror, 1846, p.
116, pl. 57, figs. 1-2. Australia.

Enidon chinensis Müller and Troschel,
Horae Ichth., vol. 3, 1849, p. 21. Manila.

— Günther, Cat. Fishes Brit. Mus., vol. 1,
1859, p. 68 (copied). — Meyer, Ann. Soc.
Españ. Hist. Nat. Madrid, vol. 14, 1885,
p. 8 (north Celebes, Manila Bay, Cebu).

— Gorgoza, Ann. Soc. Españ. Hist. Nat.
Madrid, vol. 17, 1888, p. 281 (Manila
Bay; Cebu). — Elera, Cat. Fauna Filip.,
vol. 1, 1895, p. 457 (Luzon, Manila,
Lingayen, Pangasinan, Cebu).

Depth $2\frac{3}{4}$ to $3\frac{1}{5}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$,
width $1\frac{1}{2}$ to $1\frac{3}{5}$. Snout $3\frac{3}{4}$ in
head; eye $3\frac{3}{4}$ to $4\frac{1}{6}$, little less
than snout, $1\frac{1}{4}$ in interorbital₁ without adipose lids;
maxillary not reaching eye, exposed,
length $3\frac{1}{2}$ to 4 in head; upper
lip width 2 in pupil; mandibular
angle would form broadly obtuse;
interorbital $2\frac{1}{4}$ to $2\frac{2}{5}$ in head,
broad, slightly convex; lower and
hind preorbital edge well dentate.
Gill rakers 19 + 40, finely lanceolate,
2 in gill filaments, which $\frac{4}{8}$ of
orbit.

Scales 24 to 27 in lateral
axial series to caudal base; 10 or
11 transversely, 19 or 20 predorsal.

23095 and 23096. Romblon. March 26, 1908. Length 50 to 87 mm.

15774. Sacol Island. September 9, 1909. Length 86 mm.

12683. San Miguel Island, Tabaco Bay, Luzon. June 4, 1909. Length 118 mm.

23983. Santa Cruz, Marinduque Island. April 24, 1908. Length 79 mm.

23999. Vitanki reef. September 24, 1909. Length 83 mm.

23052. Surigao, Mindanao. May 8, 1908. Length 96 mm.

23678. Tapiantana Island, south of Zamboanga. September 13, 1909. Length 101 mm.

8668. Tara Islands. December 15, 1908. Length 164 mm.

Soft vertical fins finely scaled basally. No axillary pectoral scale. Scales with 8 or 9 basal radiating striae; 113 to 132 apical denticles, with 3 series of basal elements; circuli very fine.

D. IV - I, 8, I, first spine $1\frac{1}{4}$ to $1\frac{2}{3}$ in head, first ray $1\frac{3}{4}$ to $1\frac{5}{6}$; A. III, 9, I, third spine 2, first ray $1\frac{1}{2}$; caudal 1, emarginate behind; least depth of caudal peduncle 2; pectoral $1\frac{1}{2}$ to $1\frac{2}{3}$, rays II, 13; ventral rays I, 5, fin $1\frac{1}{3}$ to $1\frac{2}{3}$ in head.

Gray brown above, below whitish. Each row of scales on back and sides with longitudinal

17166. Port Matalvi, Palawan Island.
November 23, 1908. Length 64 mm.

23099. Port Palapag, Luzon., ^{June 2, 1909.} Length 76 mm.

14601. Port Palapag. June 3, 1909.

Length 142 mm.

8 examples. Port Usan, Mayampayan Island. December 17, 1908. Length ^[921.] 44 mm.

11754. Tujada Bay. May 15, 1908. ⁽⁶⁸²⁾

Length 105 mm.

18975. Drinalasag Island, Masamat Bay,
Luzon. June 12, 1909. Length 140 mm.

23556 to 23558. Rapurapur Island,
June 22, 1909. Length 44 to 87 mm.

23865. Rapurapur Island. June 29, 1909.
Length 71 mm.

10 examples. Reef south lagoon,
Toumindao Island, Sulu Archipelago.
February 26, 1908. Length 67 to 109 mm.

gray streak. Dorsals, caudal and pectoral grayish, other fins whitish.

Portuguese East Africa, Seychelles, India, Malacca, East Indies, Indo China, Philippines.

in head; ventral $1\frac{1}{2}$ to $1\frac{3}{5}$.

Back drab brown, sides and below paler and under surfaces of both head and body whitish. Iris dull yellowish white. Fins uniformly pale brown.

2442

Three examples. Bacove, Luzon.

June 15, 1908. Length 30 to 73 mm. Scales 27.

Seventeen examples. Basud River in
fresh water, Luzon. June 15, 1909.

Length 35 to 65 mm. No adipose eyelids.
Scales 27. No axillary pectoral scale.

A. III, 9, I.

Nine examples. Bulan Island,
Samales Group. September 13, 1909.

Length 52 to 67 mm. Scales 27.

Thirteen examples. Cebu River,
Cutandunnes Island. June 9, 1909.
Length 32 to 98 mm.
No adipose eyelids. Scales 26 to 29.

No axillary pectoral scale. A. III, 9, I.
In very young spinous dorsal and
end of soft dorsal in front
black.

~~14754~~. Van Juanico Straits, Leyte.
April 13, 1908. Length 40 mm.

20627. Sirinao Island, Hakoda Bay,
Palawan. December 30, 1908. Length 45 mm.

49 examples. Tara Island. December
15, 1908. Length 44 to 69 mm.

3 examples. Tara Island. December
15, 1908. Length 24 or 25 mm. [810.]

23621. Tataan Island. February 20,
1908. Length 40 mm. [242.] Stripe along
back amber yellow, contains line of
purple spots from head to caudal and
thin silvery line which merges into
broad band of silvery, which extends
from eye to caudal base. Below broad
amber yellow band from snout to

Seven examples. Camp Overton,
Mindanao. August 15, 1909. Length
32 to 37 mm. Scales 28 mm.

Seven examples. Capunuyfugan,
Mindanao. May 9, 1909. Length 29
to 72 mm.

Thirteen examples. Caligan River
three miles from mouth, near Paluan
Bay, Mindoro Strait. December 11, 1908.
Length 33 to 64 mm. Scales 28.

Two examples. Davao, Mindanao.
May 16, 1908. Length 53 to 55 mm.
Scales 25 to 27.

Two examples. Iloilo River, shore
above Iloilo, Panay. June 2, 1908.
Length 33 to 59 mm.

stripe across maxillary to mandible tip; branch from last carried in front of eye, through front nostril, then joined behind pectoral base, by 6 or 8 short bars of similar color; reddish stripe behind ventral base, follows along below anal, joins its fellow and continues along lower caudal edge. First dorsal olivaceous, black spot at tip of soft membranes, base of second and all of third reddish; second dorsal pink, more or less distinct reddish bar at base. Anal similar. Caudal reddish. Paired fins reddish, ventrals tipped with black.

Twenty examples. Manila Bay, Luzon.
December 6, 1907. Length 21 to 58 mm.
No adipose eyelids. Scales 28. No
axillary pectoral scale.

Two examples. Manila Harbor.
December 30, 1907. Length 52 to 54 mm.

Four examples. Mansalay, Mindoro,
in fresh water. June 4, 1908. Length 48
to 60 mm. Scales 28.

Two examples. Luzon Point, Panay.
February 4, 1908. Length 37 or 38 mm.
Scales 28? A. III, I, I.

Two examples. Hakoda Bay, on
river, Samar. December 31, 1908.
Length 100 to 110 mm. Scales 27.

olivaceous, sides gray. Lower head and breast white, latter with reddish wash. Stripes on sides dusky orange, brightest on head; first begins behind snout, passes above eye, follows under lateral line to caudal base and joined by third stripe below, which begins behind upper part of orbit and runs into first below front of second dorsal; pair of short stripes on nuchal region, above first, become single across forehead; pair of broad stripes, third and fourth in order, behind eye to caudal; upper even with middle of eye and continuing forward as blackish

62 examples. Paluan River, Mindoro.
 December 13, 1900. Length 32 to 62 mm.
 No adipose eyelids. Scales 26. No
 axillary pectoral scale. Maxillary concealed.
 Pectoral $1\frac{1}{4}$ to $1\frac{1}{3}$. A. III, 9, I.
 Brown above, silvery below. No
 markings.

One example. Panabutan Bay,
 Mindanao. February 6, 1908. Length 12
 mm. Scales 28.

Six examples. Taputay Island,
 Tawi Tawi. Length 22 to 31 mm.
 Scales 27. A. III, 9, I.

Two examples. Pasacao River at
 Pasacao, Luzon. March 9, 1909. Length
 90 to 104 mm. Scales 28.

narrow stripes on upper side and like most of others tinted with reddish bronze. narrow black line on back below dorsal. Vertical and paired fins reddish. Second dorsal spine yellow, membrane crimson dotted with black.

4 examples. Reef opposite Cebu.
April 7, 1908. Length 20 to 24 mm. [510.]
Stripes dull vermilion, interspaces pearly. Tip of lower jaw black.
Fins slightly reddish. Tip of first dorsal somewhat dusky.

8 examples. Saloon Island, Ragay Bay,
Ragay Gulf, Luzon. March 10, 1909.
Length 26 to 30 mm. [1293.] Back

Fifteen examples. Fort Dupon, in
brackish river, Leyte. March 17, 1907.
Length 35 to 47 mm.

4987 to 4989. Ragay River, Ragay
Gulf, Luzon. March 10, 1907. Length
36 or 37 mm.

Four examples. Santiago River,
Pagapas Bay, Luzon. February 20, 1907.
Length 52 to 77 mm. Scales 29.

Five examples. Tayabas River
near mouth, Marinduque. February 25,
1907. Length 18 to 30 mm.

77 examples. Zamboanga Canal.
October 8, 1907. Length 18 to 118 mm.
Scales 28.

Four examples. Borontulo River, Gulf of
Tawi, Celebes. November 15, 1907. Lengths
35 to 40 mm.

second membrane orange; second dorsal, anal and caudal pink; paired fins pink, pectorals paler.

1 example. Port Jamelo, Luzon Island.

July 13, 1908. Length 44 mm. [679.]

Yellowish olive above, pale below.

Broad dark stripe through eye from snout tip to caudal; another parallel from tip of mandible and connected through middle of side by 8 cross bars with upper dark stripe, enclosing rounded, oblong, silvery spaces. Branch from opercle across pectoral base along abdominal region, below anal base uniting as median line under caudal peduncle. Two

gray streak. Dorsals, caudal
and pectoral grayish, other
fins whitish.

A. N. S. P., six examples. Bahr^a.
Dr. William H. Furness 3rd. Winter
Inst. Anat. Largest 75 mm.

A. N. S. P., one example. Delagoa Bay,
Portuguese East Africa. H. W. Bell
measured. Length 128 mm.

^{23842,}

23841 to 23844. Pandanon Island.

March 23, 1909. Length 57 to 154 mm.

22029 and 22030. Panpan Point, Tara Island, between Jolo and Tawi Tawi. September 20, 1909. Length 95 to 110 mm.

10656. Polloc, Mindanao. May 22, 1908. Length 15 1/2 mm.

14366. Port Calton, Busuanga Island. December 15, 1908. Length 135 mm.

18719. Port Dupon, Leyte. March 17, 1909. Length 72 mm.

19957 and 20534. Port Galera, Mindoro. October 27, 1909. Length 77 to 111 mm.

10483. Port Maricaban, Luzon. July 21, 1908. Length 110 mm.

Mugil vaigiensis Duoy and Gaimard

Mugil vaigiensis Duoy and Gaimard,
Voy. Uranie, Zool., p. 337, pl. 59,
 fig. 2, 1825 (type locality, Waigiu).

— Bleeker, Verslag. Akad. Wet.
Amsterdam, ser. 2, vol. 2, p. 300,
 1868 (Waigiu); ned. Tijds. Dierk.,
 vol. 4, p. 143, 1873 (1874) (China).

— Weber and Beaufort, Fish. Indo
Austral. Archip., vol. 4, p. 244, 1922
 (Pulu Weh; Java Sea, Nusa Kembangan;
 Kangeang; Saleyer; Paternoster
 Islands; Flores; Ambon; Batjan;
 Waigiu; Sorong, New Guinea).

~~over sea~~ Xunckley and Mohr,
Mitteil. naturh. Mus. Hamburg,
 vol. 42, p. 131, figs. 4-5 (young),
 1926 (Alugul, Saka-Muro,
 Admiralty Islands; Lieblisch
 Islands, south west coast,

Mugil vaigiensis Duoy and Gaimard

Mugil vaigiensis Duoy and Gaimard,
Voy. Uranie, Zool., p. 337, pl. 59,
fig. 2, 1825 (type locality, Waigiu).

— Bleeker, Verslag. Akad. Wet.
Amsterdam, ser. 2, vol. 2, p. 300,
1868 (Waigiu); Ned. Tijds. Dierk.,
vol. 4, p. 143, 1873 (1874) (China).

— Duncker, Mitteil. naturh. Mus.
Hamburg, vol. 21, p. 166, 1903 (1904)
Kuala Selangor; Changi). —

Boulenger, Cat. Fresh Water Fish.
Africa, vol. 4, p. 97, fig. 59, 1916
(Red Sea). — Duncker and Mohr,
Mitteil. naturh. Mus. Hamburg,
vol. 42, p. 131, figs. 4-5 (young),
1926 (Drugul, Vaka-Muro,
Admiralty Islands; Liebleich
Islands, south west coast,

black blotch behind gill opening.

nematocant

b.² Lethrinus. Second dorsal spine not
elongated.

c. Black lateral blotch present on body.

d. Ten or 11 dark vertical bands, broken

Centropomus scorpaenoides Cuvier,

Hist. Nat. Poiss., vol. 3, 1829, p. 48.

Waigiu; New Guinea). — Richardson,
Ann. Mag. Nat. Hist. London, vol. 9,
1842, p. 120.

Myriodon scorpaenoides Barneville,

Rev. Zool., 1847, p. 130.

Sebastes stoliczkae Day, Fishes of India,
pt. 1, 1875, p. 148, pl. 36, fig. 1. Nicobars.

Gennadius stoliczkae Jordan and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907),
p. 37 (Panay).

Rhabdosebastes stoliczkae Fowler and
Bean, Proc. U. S. Nat. Mus., vol. 62, 1922,
p. 60 (Cebu).

2449

Simpson Harbor, Linden Harbor,
Aien Bay, New Pommernia;
Friedrich Wilhelm Harbor,
New Guinea); Proc. Acad. Nat.
Sci. Philadelphia, vol. 77, 1927, p.
264 (Philippines; types of
Mugil ogilbyi ^{Bull.}; Bishop Mus.,
no. 38, p. 8, 1927 (Christmas and
Palmyra Islands); Mem. Bishop
Mus., vol. 10, p. 124, fig. 27, 1928
Rarotonga, Mangareva, Raiatea,
Guam, Tuamotus, Fati, Apia,
Funafuti, Tonga, Makemo,
Tongatapu, Rongerua, Suva,
Marshalls, Moen, Society Islands,
Kingsmills; vol. 11, no. 5, p. 324,
1931 (reference). — Pellegrin, Mem.
Acad. Malgache, vol. 14, p. 180, fig.
98, 1933 (type; Madagascar).

Centrogenys waigiensis Bleeker, Atlas
 Ichth. Ind. Néerl., vol. 7, 1873-76, p. 68.
 (Java, Singapore, Bintang, Banka,
 Bawean, Celebes, Amboina, Timor,
 Waigiu). — O'Shaughnessy, Zool. Record,
 1876, fishes, p. 10. — Vinader, Proc.
 U. S. Nat. Mus., vol. 42, 1912, p. 497
 (Riu Kiu). — Beaufort, Bijdr. Dierk.,
 Amsterdam, 1913, p. 111 (Macassar).
Centrogenys waigiensis Boulenger, Cat.
 Fishes Brit. Mus., vol. 1, 1895, p. 147
 (Singapore, Cebu, Jones Straits,
 Mabuiag Island, Port Essington,
 Freycinet's Harbor, Port Mable,
 Australia). — Fowler, Proc. Acad. Nat.
 Sci. Phila., 1907, p. 250 (Singapore). —
Jordan and Richardson, Bull. Bur.
 Fisher., vol. 27, 1907 (1908), p. 256 (Cuyo).
 — Weber, Siboga Exped., vol. ⁵⁷ ~~65~~ ^{Fishes}, 1913, p.
 198 (Macassar; Saleyer; Dobo, Aru Islands).

Mugil waigiensis Bleeker, Nat.

Tyds. Ned. Indië, vol. 19, p. 331, 1859

(Batjitan, Java); vol. 22, p. 101, 1860

(Singapore), 1860 p. 108 (Muntok,
Bangka). — ~~Martens~~ Günther, Cat.
Act. Soc. Sci. Ind. Néerl., vol. 8
(Sumatra), p. 12, 1859 (Benculen);
Nat. Tyds. Ned. Indië,

Fish. Brit. Mus., vol. 3, p. 435, fig.
(head), 1861 (Red Sea, Pinang,

East Indies, North west Australia,
South Australia). — Day, Fishes

of Malabar, p. 144, 1865. —

Kner, Reise Novara, Fische, p. 224,

1865 (Madras). — Martens, Verh.

zool. bot. Ges. Wien, vol. 16, p. 378,

1866 (Koseir). — Klunzinger,

Verh. zool. bot. Gesell. Wien, vol.

20, p. 828, 1870 (Red Sea). —

Castelnau, Proc. Zool. Acclimat.

Bleeker, Verslag. Akad. Wet. Amsterdam, ser. 2, vol. 2,
p. 293, 1868 (Rio, Bintang).

Depth $2\frac{2}{5}$ to $2\frac{7}{8}$; head $2\frac{1}{4}$ to $2\frac{1}{3}$, width 2 to $2\frac{1}{8}$. Snout $5\frac{1}{8}$ to $5\frac{1}{2}$ in head; eye $3\frac{1}{3}$ to $3\frac{1}{2}$, greater than snout or interorbital; maxillary reaches opposite eye center, expansion $\frac{2}{3}$ to $\frac{1}{2}$ in eye, length $2\frac{3}{4}$ to $2\frac{4}{5}$ in head; teeth finely villiform, in bands in jaws, on vomer and palatines; interorbital $5\frac{1}{2}$ to $5\frac{2}{3}$, convex; hind preopercle edge finely serrated and 3 large antrorse spines on lower edge - graduated down from first or anterior which largest; opercle ends in single sharp spine. Gill rakers 5 + 11, asperous stumps.

Scales 40 or 41 in lateral line to caudal base and 3 or 4 more on latter, 6 above, 11 below, 23 predorsal, 6 rows across cheek; above lateral line scales in oblique rows; small

Zool. Soc. Victoria, vol. 1, p. 140,
1872 (Victoria); Rec. London Intern.
Exhib., ~~vol. 1~~ pt. 7, no. 5, p. 14, 1873
(Victoria). — Martens, Preuss.
Expd. Ost Asien, vol. 1, p. 395,
1876 (Singapore; Macassar). —
Day, Fishes of India, pt. 2, p.
359, pl. 73, fig. 4, 1876 (Bombay).
— Günther, Journ. Mus. Godeffroy,
vol. 5, pt. 11, p. 216, pl. 121, fig.
B, 1876 (Society Islands; Tahiti).
— Klunzinger, Sitzs. Ber. Akad.
Wiss. Wien, math.-naturw. Kl.,
vol. 80, pt. 1, p. 315, 1879 (1880)
(Port Moresby). — Macleay, Proc.
Linn. Soc. New South Wales, vol.
4, p. 420, 1880 (Port Darwin; Cape
York). — Günther, Rep. Voy.
Challenger, vol. 1, pt. 6, p. 44, 1880
(Somerset). — Macleay, Proc.

ventral and 3 or 4 across anal and caudal. Belly and under surface of abdomen uniform pale to whitish.

India, East Indies, Philippines, Rio Kiu, Australia. The original figure by Day and Gaimard is poor. It shows but 3 dark bars on the pectoral and 2 on the ventral, though they say "les taches des pectorales et des ventrales tendent à former trois lignes régulières."

21764 and 21765. Cebu market. March 20, 1909. Length 102 to 112 mm.

13983 and 13984. Iloilo market. May 31, 1908. Length 110 to 114 mm.
Example. Light Point, Balayan Bay. January 18, 1908. Length 70 mm.
19814. Point San Vicente, northern Luzon. November 18, 1908. Length 100 mm.

Linn. Soc. New South Wales, vol.
 5, pt. 2, p. 47, 1881 (reference;
~~and Macleay, Trans.~~ vol. 8, p. , 1883
 Lower Burdekin River). —
 Klunzinger, Fische Roth. Meer.,
 p. 133, 1884. — Day, Fauna British
 India, Fishes, vol. 2, p. 356, 1889.
 — Sauvage, Hist. nat. Madagascar,
 Poiss., p. 401, pl. 41a, figs. 5-a,
 1891 (Madagascar). — Weber, Zool.
 Ergebn. Ned. Ost Ind., vol. 3,
 p. 451, 1894 (Borneo, Banka,
 Sumatra, Java, Madura, Celebes,
 Batjan, Ambona, Ternate). —
 Steindachner, Abhandl. Senckenberg.
 Ges., vol. 25, p. 435, 1900 (Ternate).
 — ^{Fish} Stead, Addit. Fauna New
 South Wales, vol. 1, p. —, 1907
 (Cleveland Bay). — Weber,
 Siboga Exped., vol. 57, Fische, p. 137, 1913
 (Pentamer Island; Selegie).

970

Genus Plectropomus Oken.

Plectropomus Oken, Isis, 1817, p. [1182]
1782 (on ^{Les} Plectropomus Cuvier, Règne
Animal, vol. 2, 1817, p. 277). Type
Bodianus maculatus Bloch, designated
by Jordan, Tanaka, Snyder, Journ.
College Sci. Tokyo, vol. 33, 1913, p. 152.
Plectropoma (Cuvier) Quoy and Gaimard,
Voy. Uranie, Zool. ^{pt. 7} 1824, p. 318. Type
Plectropoma punctatum Quoy and Gaimard
= Bodianus maculatus Bloch, monotypic.
Paracanthistius Bleeker, Verh. Akad.
Wet. Amsterdam, vol. 14, 1874, p. 13.
Type Holocentrus leopardus Lacépède,
orthotypic.

Body elongated, compressed. Mouth
large, protractile. Maxillary exposed,
with supplemental bone. Teeth in

²⁴⁵³
— Boulenger, Cat. Fresh Water Fish. Africa,
vol. 4, p. 97, fig. 59, 1916 (Red Sea)

— Vinciguerra, Ann. Mus. Civ. Stor.
Nat. Genova, ser. 3, vol. 10, p. 596,
1921-26 (Sarawak).

— Barnard, Ann. South Afric. Mus.,
vol. 21, pt. 1, p. 310, June 1925 (Natal;
Delagoa Bay; Chinde).

Dr. George V. Myers calls my attention
to my genus Pteroglanis in these
Proceedings, vol. 85, 1934, p. 92. It
is preoccupied by Pteroglanis
Eigenmann and Peirson 1924 (Indiana
University Studies no. 64) for a South
American silurid. I therefore prop

Pteropsoglanis new genus

Type Pteropsoglanis horai new species

As it is sufficiently described,
diagnosed and figured in the
above referred to paper, they
may be consulted there for details
and characters.

Mugil (Liza) waigiensis McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2,
p. 141, July 7, 1925 (reference).

Mugil wageensis Bleeker, Verslag.
Akad. Wet. Amsterdam, vol. 14, p.
101, 1862 (Batjan).

scales on bases of most fins.
 Scales with 7 basal radiating
 striae; 66 to 68 apical denticles,
 with 3 to 5 transverse series of
 basal elements; circuli fine.

D. XIV, 10, I or 11, I, third spine $2\frac{1}{5}$
 to $2\frac{1}{4}$ in total head length, fourth
 ray $2\frac{1}{3}$ to $2\frac{3}{4}$; A. III, 5, I, second
 spine $1\frac{1}{3}$ to $1\frac{2}{5}$, first ray 2 to $2\frac{1}{5}$;
 caudal $1\frac{2}{3}$ to $1\frac{4}{5}$, rounded; least
 depth of caudal peduncle 4 to $4\frac{1}{3}$;
 pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$; ventral $1\frac{1}{2}$ to
 $1\frac{3}{5}$.

Pale brown, dark streaks
 extending along each scale series
 in old Talcohohe specimens. Body
 with 3 oblique dark bands, ill
 defined and very variable. Dark
 or deep brown blotches and cross
 bars on fins, 4 on pectoral and

Liza waigiensis Jordan and Seale,
Bull. Bur. Fisher., vol. 25, p. 218,
1905 (1906) (reference). — Seale,
Occas. Pap. Bishop Mus., vol. 6, no.
1, p. 15, 1906 (Mungareva; Faté;
Shortland Island; Raiatea;
Karotonga). — Jordan and Seale,
Bull. Bur. Fisher., vol. 26, p. 11,
1906 (1907) (Cuvite). — Seale and
Bean, Proc. U. S. Nat. Mus., vol. 33,
p. 240, 1907 (Zamboanga). — Fowler,
Copeia, no. 58, p. 62, June 18, 1918
(Philippines). — Reeves, Journ. Pan
Pac. Res. Inst., vol. 3, no. 2, p. 8,
1927 (Shanghai). — Tirant, Rev.
Océanogr. Pêch. Indo Chine, p. 171,
1929 (Haigon). — Chu, Biol. Bull.
St. John's Univ., no. 1, p. 105, January
1931 (reference). — Borodin, Bull.
Vanderbilt Marine Mus., vol. 1, art. 3,
p. 76, 1932 (Surabaya).

jaws in several series, inner movable, depressible, hinged at bases; very strong front canines in jaws and on side of mandible; teeth on vomer and palatines; tongue smooth.

Preopercle entire or finely serrate behind, with antrorse spines on lower edge. Opercle with 3 spines. Gill membranes separate. Pseudobranchia present. Gill rakers moderate.

Vertebrae 24, of which 14 caudal. Scales very small, roughish but not ciliated. Head partly scaled, snout naked. Lateral line feebly marked, tubes very short and straight, scales ciliated. Dorsal with 6 to 8 spines, rays 11 to 12, spinous fin nearly long as soft fin. Anal with 3 spines very feeble, and flexible, rays 8. Caudal

Liza vaigiensis Kendall and
Goldborough, Mem. Mus. Comp.
 Zool., vol. 26, p. 257, 1911 (Hiva,
 Funafuti; Marshalls; Moen;
 Makemo; Rongeru). — Whitley,
 Journ. Pan Pac. Res. Inst.,
 vol. 3, no. 1, p. 12, January-March
 1928 (Santa Cruz Islands). —
McCulloch, Mem. Austral. Mus.,
 vol. 5, pt. 1, p. 116, June 29, 1929 (reference).

Ellochelon vaigiensis Whitley, Rec.
 Austral. Mus., vol. 18, no. 6, p. 335,
 April 20, 1932 (note on Castelnau's
 material).

truncate or emarginate. Pectoral rays 16 to 18, symmetrical, rounded. Ventral with feeble, flexible spine, below pectoral, fins close together.

Indian and western Pacific Oceans. Although Boulenger admits but two species our materials seem to vindicate the three of Bleeker, besides showing another which we describe as new.

Mugil macrolepidotus Rüppell,
Atlas Reise nordl. Afrika, Fische,
p. 140, pl. 35, fig. 2 (type locality,
Sandy bays in southern half of Red Sea).

— Valenciennes, Hist. Nat. Poiss.,
vol. 11, p. 134, 1836 (Waigiu; Borabora;
Vanicolo); — Jouan, Mém. Soc. Sci.
Nat. Chérbourg, vol. 8, p. 316, 1861
(New Caledonia).

{ Cantor, Journ. Asiatic Soc. Bengal,
vol. 18, pt. 2, p. 1077, 1849 (1850)
(Sea of Pinang).

Analysis of the species.

a.¹ Plectropomus. Soft dorsal and anal without front lobes distinctly marked and though front rays highest edges of fin slope obliquely back; body without dark vertical blue lines on flanks.

b.¹ Caudal truncate; body with blue dark edged spots, moderate in size. truncatus

b.² Caudal emarginate or lunate; body spotted or dotted with blue.

c.¹ Body with pale blue dark edged spots of moderate size and sometimes with 5 dark brown cross bands. maculatus

c.² Body with very numerous, small, dark edged dots. leopardus

a.² Pleuroperca new subgenus. Soft dorsal and anal with distinct front lobes, edges of fins emarginate; body with

Mugil melanochir Valenciennes,
Hist. nat. Poiss., vol. 11, p. 143, 1836
(type locality, Java; "mer des Indes",
Yuanam).

- Bleeker, Verh. Batavia. Genoot.
(Madura), vol. 22, p. 5, 1849
(Bangcallang); nat. Tijds. ned.
Indië, vol. 3, p. (409) 423, 1852
(Sampit; Batavia, Samarang,
Surabaya, Kammal, Padang, Banda),
p. 445 (Banka), p. 717 (Gestengassam
at Koba, Banka); Verh. Batavia.
Genoot. (hal. Ich. Bengal), vol. 25,
p. 48, 1853 (reference); nat. Tijds.
ned. Indië, vol. 7, p. 361, 1854
(Batjan); vol. 10, p. 347, 1856 (Rio,
Bintang); vol. 12, p. 193, 1856
(Ternate); vol. 13, p. 479, 1857
(Prigi, Java); Act. Soc. Sci. Ind.
Néerl., vol. 2, no. 7, p. 5, 1857 (Amboina);

variable vertical blue lines on flanks.
oligacanthus

Type Plectropoma oligacanthus Bleeker.

πλευρά, rib, with reference to the blue
 parallel lines on the flank; πέγκη,
 perch.

2457
vol. 3, no. 5, p. 2, 1857-58 (Nicassar);
Nat. Tijds. Ned. Indië, vol. 15, p.
201, 1858 (Goram).

Subgenus Thetropomus Oken

Soft dorsal and anal without front lobes distinctly marked and through front rays highest edges of fin slope obliquely back. Body without dark vertical lines on flanks.

Mugil pedaraki Valenciennes,
Hist. nat. Poiss., vol. 11, p. 137,
1836 (~~type locality~~),

— Bleeker, Verh. Batavia. Genoot.
(Nat. Ichth. Bengal), vol. 25, p. 48,
1853 (reference). — Günther, Cat.
Fish. Brit. Mus., vol. 3, p. 410,
1861 (reference).

on Pedaraki ^v~~sowere~~ Russell,
Fishes of Coromandel, vol. 2, p. 66,
pl. 182, 1803, type locality,
Vizagapatam).

Plectropomus truncatus, new species

Depth $3\frac{1}{8}$ to $3\frac{3}{5}$; head $2\frac{3}{5}$ to $2\frac{4}{5}$, width $2\frac{1}{4}$ to $2\frac{2}{3}$. Snout $3\frac{3}{4}$ to $4\frac{3}{5}$ in head from snout tip; eye 4 to $7\frac{1}{2}$, 1 to $2\frac{1}{3}$ in snout, $1\frac{2}{5}$ to $1\frac{7}{8}$ in interorbital, greater than interorbital in young; maxillary reaches $\frac{3}{5}$ in eye to little beyond; expansion 1 to $1\frac{3}{4}$ in eye, length 2 to $2\frac{1}{8}$ in head from snout tip; teeth in narrow bands in jaws, pair of canines in front of each, also 2 or 3 on each mandibular ramus; narrow band of fine teeth on vomer and each palatine; interorbital $4\frac{1}{2}$ to 5 in head from snout tip, level; hind preopercle edge entire, lower edge with 3 or 4 antorse spines; opercular spines 3, median nearer lower and upper

Mugil melinopterus Valenciennes,
 Hist. Nat. Poiss., vol. 11, p. 146, pl.
 314, 1836 (type locality, Vanicolo). —
Günther, Cat. Fish. Brit. Mus.,
 vol. 3, p. 452, 1861 (Tonga). —
Martens, Preuss. Exped. Ost Asien,
 vol. 1, p. 395, 1876 (Luzon; Singapore).
 — Elera, Cat. Fauna Filipinas, vol.
 1, p. 538, 1895 (Luzon; Cavite). —
Duncker and Mohr, Mitteil.
 Naturh. Mus. Hamburg, vol. 42,
 p. 130, 1926 (Husa Bay, New-Guinea).

Mugil melanopterus (Günther, Journ.
 Naturh. Godeffroy, vol. 7, pt. 1, p. 115,
 1887 (Tonga)).

$1\frac{2}{3}$ to $1\frac{4}{5}$, truncate; least depth of caudal peduncle $2\frac{2}{5}$ to $2\frac{3}{5}$; pectoral $1\frac{4}{5}$ to $2\frac{1}{8}$; ventral $2\frac{1}{10}$ to $2\frac{1}{4}$.

Terracotta color or brown, slightly paler below. Head, body and fins marked with small blue spots, less than pupil and all ocellated with deeper brown rings; spots much more numerous with age. Fins brown like body, only spots much smaller. Iris brown. Hind caudal edge narrowly whitish. Pectoral pale brownish and only few small spots basally. Ventral darker than pectoral.

East Indies and Philippines. Apparently a valid species which we distinguish chiefly by its truncate caudal fin. The lower preopercular spines are relatively

Ligia melinoptera Jordan and Seale,
Bull. Bur. Fisher., vol. 25, p. 217,
1905 (1906) (Apia; Pago Pago). —
Jordan and Dickerson, Proc. U. S.
Nat. Mus., vol. 34, p. 607, 1908
(Suva). — Kendall and Goldsborough,
Mem. Mus. Comp. Zool., vol. 26,
p. 256, 1911 (Tongatabu, Tonga
Islands). — Whitley, Journ. Pan
Pac. Res. Inst., vol. 3, no. 1, p. 12,
January-March 1928 (Santa Cruz
Islands).

weak and the opercular spines
more or less imbedded, often
inconspicuous. The head, body and
fins are ornamented with large
blue, black edged spots.

East Indies, Philippines. Readily known
by its truncate caudal fin.

Mugil rossii Bleeker, Nat. Tijds.
Ned. Indië, vol. 6, p. 518, 1854
type locality, Kobor - Keeling,
Islands); vol. 7, p. (38) 45, 1854
(Kobor - Keeling); vol. 16, p. 275,
1858 (East Indies; diagnosis in
key). — Grünther, Cat. Fish. Brit.
Mus., vol. 3, p. 436, 1861 (note).
— Weber, Siboga Exped., vol. 57,
Fische, p. 138, 1913 (Kangeang).

Mugil rossii Beaufort, Bijdr.
dierk. Amsterdam, vol. 19, p. 107,
1913 (Saonek, Waigiu; Varong, New
Guinea).

most advanced. Gill rakers $6 + 9$ to 12 , short, $2 \frac{1}{3}$ in gill filaments which $\frac{1}{4}$ in eye; 5 upper and 7 to 10 lower rudimentary.

Scales 94 to 100 in lateral line to caudal base and 12 to 15? more on latter; tubes 81 to 84 in lateral line to caudal base and 8 to 10 more on latter; 13 to 16 scales above, 38 to 40 below, 36 to 40 predorsal to occiput, 23 to 25 rows across cheek to preopercle angle; maxillary covered with fine scales. Scales with 6 or 7 basal radiating striae; circuli fine.

D. VII, I, 10, I or I, 11, I, third spine $3 \frac{1}{2}$ to $3 \frac{3}{4}$ in total head length, first branched ray $2 \frac{1}{3}$ to $2 \frac{3}{5}$; A. III, I, 7, I, third spine $4 \frac{2}{5}$ to $5 \frac{1}{4}$, first branched ray $2 \frac{2}{5}$ to $3 \frac{1}{8}$; caudal

Mugil tegobuan Thiollière, Luna
Woodlark, p. 184, 1857 (type
 locality, Woodlark Islands).

~~Mugil occidentalis Castelnau~~
~~S. Austral. 1813, 1835.~~

Mugil ventriosus (not Richardson)
Castelnau, Viet. Offic. Rec.
 (Philadelphia Exhib. (Res. Fish.
 Austral.), p. 32, 1875 (Nicol Bay,
 Western Australia). — Macleay,
 Proc. Linn. Soc. New South Wales,
 vol. 4, p. 423, 1880 (copied). —
McCulloch, Mem. Austral. Mus.,
 vol. 5, pt. 1, p. 114, June 29, 1929
 (reference).

16004. Limango Bay, Burias Island.
March 5, 1909. Length 85 mm.

8918. Atulayan Island, Lagonoy Gulf,
east coast Luzon. June 17, 1909. Length
350 mm. (Type, U.S.N. Mus. No. 12706).

Atulayan Bay, Luzon. June 18, 1909. Length 137 mm.

7532 and 7539. Endeavor Strait,

Malampaya Sound, Palawan Island.
December 23, 1908. Length 287 to 314 mm.

9107. Sigoso Point, Samar Island.
July 28, 1909. Length 323 mm.

7254. Port Matalvi, Luzon. November
23, 1908. Length 518 mm.

A 549. Sulade Island, vicinity Jolo.
September 17, 1909. Length 225 mm.

A 511. Tapiantana Island, south of
Zamboanga. September 13, 1909.
Length 370 mm.

Mugil delicatus Jouan, Mém.
Soc. Sci. Nat. Cherbourg, vol.
21, p. 333, 1877-78 (on Jouan 1861).

Mugil ogilbyi Fowler, Proc. Acad.
Nat. Sci. Philadelphia, ^{vol. 70,} 1918,
p. 5, fig. 2 (type locality,
Philippines).

A 081. Bumbum Island, vicinity
of Darvel Bay, Borneo. September 25,
1909. Length 520 mm.

A 696. Se Amil Island, vicinity
of Darvel Bay, Borneo. September 26,
1909. Length 288 mm.

A 830 and A 844. Talise Island, north
of Celebes. November 9, 1909. Length 262
to 365 mm.

A 1130. Kayoa Island. November 29, 1909.
Length 475 mm.

Depth $3\frac{2}{5}$ to $4\frac{3}{5}$; head $3\frac{3}{5}$ to $3\frac{7}{8}$,
width $1\frac{1}{8}$ to $1\frac{1}{2}$. Snout $3\frac{1}{10}$ to $3\frac{2}{5}$ in
head; eye $4\frac{1}{8}$ to $4\frac{1}{2}$, subequal with
to $1\frac{1}{3}$ in snout with age
snout, in profile, 2 to $2\frac{3}{5}$ in
interorbital, without or only very
marginally developed adipose lids;
maxillary concealed or little exposed,
 $\frac{4}{8}$ or to length $3\frac{2}{5}$ in head,
about reaches eye; upper lip width
 $\frac{4}{7}$ of pupil; mouth would form
obtuse angle; mouth width $2\frac{3}{5}$ to $3\frac{1}{3}$
in head; interorbital $1\frac{4}{5}$ to $2\frac{1}{4}$, low,
flattened to slightly convex; lower
preorbital edge finely serrated.
Gill rakers 35 to $38 + 53$ to 57 , fine,
slender, $2\frac{1}{4}$ to $2\frac{1}{2}$ in gill filaments,
which $1\frac{1}{8}$ to $1\frac{1}{4}$ in eye.

Scales 26 to 27 in lateral

1 example. Usadea Island, vicinity of Jolo. March 3, 1908. Length 44 mm.

23755 to 23759. Daisy Island, west of Bumbun, Tusan Tando Bulong, British North Borneo. January 6, 1910. Length 60 to 83 mm.

23959. Danawan and Vi Amil Islands, vicinity of Darvel Bay, Borneo. September 26, 1909. Length 78 mm.

23745. Danawan and Vi Amil Islands. September 27, 1909. Length 66 mm.

~~43588. Tifu Bay, Boura Island. December 10, 1909. Length 44 mm.~~

1 example. Basa Reef, Gulf of Boni, Celebes, Dutch East Indies. December 17, 1909. Length 26 mm.

series from gill opening to caudal base; 10 or 11 transversely, 15 to 20 predorsal. Axillary pectoral scale absent, or sometimes $\frac{1}{3}$ of fin. Soft vertical fin scaly basally.

Scales with ^{5 to} 6 basal radiating striae, apically with broad finity or minute rugose area; circuli fine.

D. IV ^{I, 7, I or} I, I, first spine $1\frac{1}{2}$ to $2\frac{1}{2}$ in head, first branched ray $1\frac{1}{4}$ to $1\frac{7}{8}$, soft dorsal origin opposite middle of anal fin base; A. ^{to $3\frac{1}{4}$}

III, 8, I or III, 7, I, third spine $2\frac{3}{5}$, first branched ray $1\frac{1}{4}$ to $1\frac{4}{5}$; anal $1\frac{1}{8}$ to $1\frac{1}{4}$, slightly.

caudal peduncle $1\frac{3}{4}$ to $2\frac{1}{2}$, pectoral $1\frac{1}{8}$ to $1\frac{1}{2}$, sup. I, I; ventral I, I.

Example. Tataan Pass. February 21,
1908. Length 77 mm.

6146 and 24057. Tongil Island east
of Gumila Reef. September 14, 1909.
Length 43 to 93 mm. 6 examples.

15583. Tulayan Island, Jolo Island.
September 15, 1909. Length 78 mm.

16585. Tunalutan Island, east of
Zamboanga. September 9, 1909. Length
74 mm.

8035. Tumindao Island, Sulu
Archipelago. February 26, 1908. Length
75 mm. Male with buccal eggs.

23087. Tutu Bay, Jolo Island,
first anchorage. September 19, 1909. Length
77 mm.

fin $1\frac{2}{5}$ to $1\frac{3}{4}$, spine $1\frac{3}{4}$ in fin.

Back, ^{brown or} dull olivaceous, below whitish. Iris pale to whitish. ^{or dorsals, caudal and anal deep brown,} Fins brownish, upper $\frac{3}{5}$ of pectoral brownish to neutral black.

Red Sea, East Africa, Natal, Madagascar, India, Andamans, Penang, Singapore, East Indies, Philippines, Indo China, China, North west Australia, North Australia, Queensland, New South Wales, Victoria, South Australia, Melanesia, Micronesia, Polynesia.

23982. Santa Cruz Island, Marinduque.
April 24, 1908. Length 67 mm.

23085. Simalue Island, north of
Tawi Tawi. September 22, 1909. Length
60 mm.

23053 to 23055, 23084. Surigao,
Mindanao Island. May 8, 1908. Length
53 to 80 mm. Male with buccal ova.

24014. Tara Island. December 15, 1909.
Length 49 mm.

23065. Tataan, Simalue Island.
February 19, 1908. Length ^{46 to} 95 mm.
15 examples.

38 examples. Tataan. February 20,
1908. Length 55 to 92 mm.

Five examples. Bolinao Bay,
Luzon. May 10, 1907. Length 24 to 36 mm.

One example. Bongao Island,
Tawi Tawi. February 23, 1908.
Length 88 mm.

Eleven examples. Buena Vista,
Guimaras Island, Iloilo Strait.
January 14, 1907. Length 51 to 68 mm.

Four examples. Capunay puyan,
Mindanao. May 9, 1907. Length 49
to 88 mm.

Six examples. Catbalogan, Samar.
April 15, 1908. Length 81 to 100 mm.

* [1044.] Cuxisigan Island. January 4,
1907. Length 30 mm.

Two examples. Chase Head, mouth
of stream at village near by in
Culavour Strait, Palawan.
^{brackish water,}

December 22, 1908. Length 54 to 61 mm.

Iris whitish or silvery, turns gray or slate in preservative. Fins all pale or whitish, with dusky tinge terminally on spinous dorsal.

East Indies, Philippines, Micronesia, Polynesia. A very abundant species, small and quite uniform in its general coloration. Changes with age slight. The elongated, filamentous, anterior or second dorsal spine variably long, perhaps sexual.

Jordan and Seale have attempted to establish the genus Mionorus Krefft largely with reference to this species.

Their statement "the palatines provided with teeth, and the two limbs of the preopercle both strictly entire" for generic characters do not agree,

[644.] Iloilo River on shore above
Iloilo, Panay. June 2, 1905. Length
25 to 107 mm. Seven examples.
Larger with each row of scales
with median dark line as 9
parallel longitudinally. Fins all
with more or less blackish.

One example. Zamboanga Bay,
Mindanao. August 9, 1901. Length
36 mm.

Six examples. Manila Bay, Luzon.
December 6, 1907. Length 40 to 77 mm.

Two examples. Manila market.
December 12, 1907. Length 105 to 114 mm.

Three examples. Mantua, Mindoro.
June 4, 1905. Length 110 to 130 mm.

Six examples. Mantua Island,
west coast of Bohol. April 5, 1905.
Length 76 to 115 mm.

and preorbital, naked. Tubes in lateral line large, simple, well exposed, without basal scale to each. Scales with 5 to 10 basal radiating striae; ~~small~~ largest scales with many as 28 to 30 small blunt apical denticles; circuli moderate.

D. VI - I, 9, I or 10, I, second spine 2 to $2\frac{1}{2}$ in combined head and body to caudal base, first ray $1\frac{1}{4}$ to $1\frac{1}{3}$ in total head length; A. II, 9, I, second spine $1\frac{2}{5}$ to $1\frac{3}{5}$, first ray $1\frac{3}{5}$ to $1\frac{3}{4}$; caudal $1\frac{1}{5}$ to $1\frac{1}{4}$, little emarginate behind; least depth of caudal peduncle $2\frac{1}{6}$ to $2\frac{1}{4}$; pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$; ventral $1\frac{3}{5}$ to $1\frac{7}{8}$.

Light brown, sides of head and abdomen with silvery reflections, also some obsolete dusky dots on head, especially on cheek, others about predorsal.

Two examples. Kulusa Bay,
Palawan. December 31, 1908. Length
28 to 42 mm.

Four examples. North end of
Endeavour Strait, north west coast
of Palawan. December 22, 1908.
Length 44 to 52 mm.

One example. Tanauban Island,
Mindanao. February 6, 1908. Length
50 mm.

Two examples. Tanauban Island.
March 24, 1907. Length 65 to 110 mm.

Eight examples. Taran, Mindanao.
May 23, 1908. Length 34 to 62 mm.

Five examples. Fort Lacer, Luzon.
December 15, 1907. Length 44 to 61 mm.

One example. Fort Lacer, Mindoro.
June 7, 1907. Length 41 mm.

One example. Fort Lacer, Luzon.
July 13, 1905. Length 58 mm.

Depth $2\frac{1}{8}$ to $2\frac{1}{4}$; head $2\frac{2}{5}$ to $2\frac{1}{2}$, width $2\frac{2}{5}$ to $2\frac{1}{2}$. Snout $4\frac{1}{2}$ to 5 in head from upper jaw tip; eye $2\frac{2}{5}$ to $2\frac{3}{5}$, greater than snout or interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{2}{5}$ in eye, expansion 2 to $2\frac{1}{2}$ in eye, length 2 to $2\frac{1}{8}$ in head; teeth very minute, villiform, in narrow bands in jaws and apparently absent from palate; interorbital $3\frac{4}{5}$ to 4, but slightly convex; ridge and hind edge of preopercle entire, lower edge denticulate. Gill rakers 6 + 23, finely lanceolate, twice length of gill filaments or $2\frac{1}{8}$ in eye.

Scales 22 or 23 in lateral line to caudal base and 2 or 3 more on latter, 2 above, 6 below, 5 predorsal, 2 rows of cheek scales to preopercle ridge; muzzle, including interorbital, maxillary

Seven examples. Port Maitland,
Tas. w. November 23, 1900. Length
35 to 43 mm.

Two examples. Port Denison,
Zaminto, Cunningham Island. March
11, 1900. Length 25 to 28 mm.

One example. Port Keir,
Zaminto. January 3, 1901. Length
39 mm.

Four examples. Van Heijzel
Harbor, Ticao Island. April 2, 1900.
Length 51 to 59 mm.

Four examples. Santa Cruz Island,
Marinduque. April 24, 1900. Length
56 to 68 mm.

Two examples. Caradero Bay, Luzon.
July 23, 1900. Length 36 to 61 mm.

8523. Verde del Sur Island.
April 6, 1904. Length 395 mm.

Apogon graeffii Günther, Journ.
Mus. Godeffroy, vol. 1, pt. 1, 1873, p. 22,
pl. 20, fig. 2. Boston Island, Marshall
Group, Oceania.

Apogon graeffii Streets, Bull. U. S.
Nat. Mus., no. 7, 1877, p. 101 (Samoa).

Microgobius graeffii Jordan and Seale,
Bull. Bur. Fisher., vol. 25, 1905 (1906),
p. 247, fig. 41. Apia and Tago Tago,
Samoa.

Amia gilberti Jordan and Seale, Proc.
U. S. Nat. Mus., vol. 28, 1905, p. 777, fig. 3.
Regro.

Amia doryssa Jordan and Seale, Bull.
Bur. Fisher., vol. 25, 1905 (1906), p. 245,
fig. 39. Apia, Samoa.

Ten examples. Limbe Island,
Celebes, Dutch East Indies.
November 12, 1909. Length 45 to 93 mm.

Sipogon leptacanthus Bleeker, Nat.
Tijds. Ned. Indië, vol. 12, 1856-57, p.
204. Ternate. — Günther, Cat. Fishes
Brit. Mus., vol. 1, 1859, p. 232 (copied).
Amia leptacantha Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, p.
97, pl. (71) 349, fig. 3 (Ternate). —
Fowler, Copeia, no. 58, June 18, 1918, p.
63 (Philippines).

Amia gilberti Jordan and Seale,
Proc. U. S. Nat. Mus., vol. 28, 1905, p.
177, fig. 3. Negroa.

Amia doryssa Jordan and Seale,
Bull. Bur. Fisher., vol. 25, 1905 (1906),
p. 245, fig. 39. Apia, Samoa.

2474
A. N. S. P., no. 47479. Philippines.

Commercial Museum of Philadelphia.

Length 210 mm. Type of rugil
oxyilbyi.

A. N. S. P., no. 47480. Philippines.

Commercial Museum of Philadelphia.

Length 205 mm. Paratype of rugil
oxyilbyi.

23097 and 23098. Romblon. March 26,
1908. Length 67 to 75 mm.

23066 to 23069. Romblon Harbor.
March 25, 1908. Length 53 to 69 mm.
Male with buccal eggs.

1 example. Sabon Island, Ragay Bay,
Ragay Gulf, Luzon. March 10, 1909.
Length 43 mm.

14057 and 15775. Sacol Island.
September 9, 1909. Length 42 to 69 mm.
3 examples.

8279. San Miguel Island, Tabaco
Bay, Luzon. June 4, 1909. Length 77 mm.

6 examples. San Miguel Port, ^{Ticao Island,} between
Burias and Luzon. April 21, 1908.
Length 49 to 81 mm.